57c

ACCOUNTING

¶ This treatise has been especially prepared by Henry Parker Willis, Associate Editor, Journal of Accountancy, Editorial Staff, New York Journal of Commerce, and Professor of Finance, George Washington University. It is supplemented by the writings of certified public accountants, auditors and expert bookkeepers. It is a popular and authoritative exposition of the theory and practice of accounting, according to the best present-day standards, and contains many concrete examples, practical ideas and helpful suggestions. This volume and its companion work on Auditing and Cost Accounting contain the information leading to the Certified Public Accountant examination. The work is arranged to serve as a guide and reference, and includes a complete table of contents, a comprehensive index and test questions.

CONTENTS

ACCOUNTING.

PART I.

PART II.

THE PRINCIPLES OF ACCOUNTING.

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PART I.

INTRODUCTION.

The following pages have been written for the purpose of setting forth the general principles upon which modern accounting systems in the broad sense of the term are organized. Comparatively little attention has been paid to bookkeeping as such, therefore, the treatment offered in Sections II and III being intended simply to afford a basis or setting for the theory of the account and its relation to the traditional or conventional books of account. While it has not been attempted to go, in detail, into all of the books that are customarily employed, or to give forms representing more than a very few of them, it has been sought to present enough elementary descriptive matter to make plain the theoretical treatment in its application to the bookkeeping side of the subject. On the other hand, it has been attempted to avoid purely abstract discussion of the philosophy of accounts and to emphasize the discussion of the principles upon which actual accounting is founded. The reader who has not already made a study of bookkeeping technique should read in conjunction with this discussion some work on practical bookkeeping. A

list of available works on accounting and bookkeeping is afforded in Part II, p. 210, of the present volume.

I. FUNDAMENTAL IDEAS.

Nature of Commerce.

The process by which economic relations between men are carried on is ordinarily known as trade or commerce. Such commerce consists of the exchange of goods against goods, services against services, services against goods, or any one or all of these against money. In practice, civilized societies state all transactions in terms of money, and even where an interchange of goods takes place upon what amounts to a basis of barter, the operation is usually reduced to terms of money, and thus a common denominator designed for the purpose of rendering transactions readily comparable is adopted. The fact that in practice such a common denominator is in this way accepted and that every transaction is reduced to a money basis, renders it possible to institute comparisons of commercial transactions which shall show what the net outcome of a complex process of buying and selling is. At the same time, the complexity of such a process of buying and selling in different quantities and to different individuals as well as at different rates, renders it imperative that an individual or group of individuals engaged in the process of interchanging goods or services with others shall have some system whereby operations are regularly recorded. If there were no such system, confusion would exist as soon as the volume of the transactions handled at all exceeded what could be readily carried in a single memory. Moreover, as soon as transactions reach a somewhat developed stage, it becomes evident that a mere straightforward record of what has been bought and what has been sold does not suffice to indicate the true position of the owners of the goods. Economic institutions, such as banking, transportation,

and the like, involve readjustments of relationships between traders which necessarily have to be represented in some way more or less corresponding to the complexity of the subject-matter, although aiming at the ultimate reduction of these complexities to a final simplicity.

What Is Accounting?

The body of principles under which business transactions are thus recorded in an orderly form and in their proper relation to one another, is called accounting. Accounting is a science which aims at the systematic presentation of business facts and whose rules are designed to indicate or state the principles upon which such a record of business facts must be made. In current discussion, there is a good deal of confusion about the use of the term accounting. By many the word is made synonymous with the word bookkeeping, as if the two were substantially identical. Some persons use the term accounting as if it were merely a high-flown expression for the word bookkeeping, while others admit the existence of a difference between the two ideas but consider that accounting is merely "advanced" or "difficult" bookkeeping. This confusion of ideas is injurious to the proper development of a science of accounting, as well as to the proper statement of bookkeeping methods. It should be recognized at the outset that the term "accounting" is properly used only when applied to the principles, system, or theory by which business facts are recorded with the design of showing certain classes of results, or to the system or theory in accordance with which business facts are so analyzed as to exhibit their relationships to one another.

Relation to Economics.

Thus defined, accounting appears as an important branch of economics. Economics may be regarded as that science which deals with the relationships of men in re-

gard to wealth. Accounting is an analytical-descriptive phase or branch of economics; it is the phase of economics which sets down or arranges the results of actual economic transactions in such a way as to exhibit the outcome of those transactions. A correct application of accounting will not only set forth the truth about a given set of business transactions, but it will exhibit the effect of a series of business transactions in comparison with a similar series elsewhere or at some other time. It will render possible the reduction of net results of business transactions to a common and comparable basis so that they may be contrasted with others or with what is recognized as the standard or normal outcome of such a set of transactions. Accounting has also its analytic side—the converse of its constructive—which affords the basis for the study of existing commercial institutions from the standpoint of investment and speculation, and which furnishes the foundation for correct auditing principles. This conception of accounting places the subject in a serious and dignified relationship to the science of economics as a whole, and lays stress upon the necessity of a systematic development of accounting ideas in harmony with the best results of economic thought.

What Is Bookkeeping?

But what is bookkeeping? The term as ordinarily employed simply means the recording of business transactions in any given enterprise or undertaking in accordance with a previously determined system or plan. Bookkeeping is thus recognized as, properly speaking, an art. The bookkeeper stands in relation to the accountant in precisely the same position as does the engineer in relation to the builder of the engine he is operating. The engine-builder has devised a machine for the economical performance of certain work; it is the function of the engineer to operate that machine. The accountant provides a system upon

which the facts of business may best be recorded. The bookkeeper, in pursuance of that system, records the facts from day to day, following out the methods of analysis and combination which the accountant has indicated. His work is not necessarily mechanical, because under certain conditions it may call for a very substantial amount of initiative and independent judgment. Doubtless, it would be well if every operating engineer were a completely trained engine-builder familiar with the theory on which the machine he runs is constructed. The same is true of the bookkeeper. It would be highly desirable if a firm's books could be both constructed and carried on by the same person, and if that person were theoretically capable of devising a suitable set of records which should give effect to a complete system for recording the transactions of the concern. Neither of these things is ordinarily possible. Specialization is as characteristic and as necessary in the sciences or professions which record the results of business transactions as it is in those which originate or control the transactions.

The Accounting Profession.

As long as business was of a single type, and that a comparatively simple one, there was no very extended field for the development of accounting ideas. This is not at all remarkable; on the contrary, it is the same situation which has existed in other lines of work. When the inhabitants of the United States lived largely in log cabins, there was not much demand for the services of an architect. As long as business was confined to simple retail transactions or to elementary manufacturing operations with small capital, a uniform type of bookkeeping could be employed and the bookkeeper, if intelligent, could be depended upon to make such necessary modifications as the special circumstances of the particular business seemed to dictate. This condition of affairs gradually changed as

the amount of capital employed became larger, as the nature of business became more highly specialized, as the corporation took the place of the individual enterprise or the partnership, and as the distinction between governmental and private business came to be recognized. Owing to this process of development, a consequent demand sprang up for the elimination of unnecessary processes and the introduction of new ones that had become necessary in order to show where the given business stood at a particular moment. Moreover, as business has become more complex, and as the margin of profit has narrowed while the size of operations has greatly increased, greater and greater stress has been put upon the methods of getting a system of records which would show in the most accurate possible way what was the result of a given transaction or operation. It was not of very great importance to a firm whether it made two or three cents per yard of cloth when it sold only a hundred or a thousand yards per annum and when this was but one element in the business; but it was of very great importance whether the profit was two or three cents or nothing when the sales were 100,000 yards or 1,000,000 yards per annum and when the business dealt solely in such cloth. It has been recognized, therefore, that it is well worth while for a business concern to pay, and pay handsomely, for the very best professional advice regarding the method of analyzing and stating its daily operations or of organizing its business in such a way as to admit of a comparison of its operations. In consequence of this strong demand, the profession of accountancy has been gradually evolved.

Development of Accountancy.

The discussion of bookkeeping, sometimes upon a plane and from a standpoint that raised it practically to the level of the science of accounting, because of the theoretical grasp and power of analysis that was shown, dates back

hundreds of years. It has not, however, been until comparatively recently that a distinct differentiation has taken place between bookkeeping and accounting. Up to comparatively recent times the routine method of training bookkeepers was followed in Great Britain and then such bookkeepers were left to evolve themselves, if they could, into accountants. The course of training was haphazard and inadequate, and as a result there was gradually developed in England a demand for a better method of discipline and for a public recognition of the profession of accountancy, as well as for its regulation and control. The outcome was the establishment of associations of "chartered accountants," the members of which speedily came to have a high professional standing, their duties being those of examining into the condition of businesses, ascertaining the situation, reporting thereon, certifying that the books of businesses had been accurately conducted, suggesting changes in methods of accounting, recommending new modes of business administration, etc. Similar influences were at work in the United States, but it was a much longer time before there was any legal recognition of the profession of accountancy. In 1896, the State of New York passed its law relating to certified public accountants, and since that year the States of Pennsylvania, Illinois, Maryland, California, Washington, New Jersey, Michigan, Florida, Utah, Colorado, Connecticut, Georgia, Louisiana, Ohio and Montana have legislated along similar lines. Measures designed for the same purpose are now pending in other states, and will gradually be adopted until in every state the position of the accountant will be recognized by law, and a man who has not secured a certificate by passing the requisite examination or giving evidence of equal training will be in somewhat the same position as the medical student or graduate who has not taken the state examination exacted of all who wish to practice medicine.

Scope of Accountancy Examinations.

Because of the broad scope of the accountant's labors, because the accountant is frequently brought into contact with large problems which involve some knowledge of law and other allied sciences, it is customary to include in these examinations matter additional to that which properly falls within the scope of accounting in the sense in which that term has been defined in preceding pages. Practically every regular examination for public accountants now includes, besides questions on the theory of accounts, problems in practical accounting and auditing and the outlines at least of commercial law. Behind these is usually the requirement of a high school education or its equivalent and in some cases other and additional training. In what is set forth in the following pages, the effort is made to present in outline the so-called theory of accounts with some of its applications in practice. The subject of auditing is also dealt with in very general terms. By auditing is meant the examination of records or accounts that have already been made and whose correctness is tested and certified to by the auditor. The auditor of course has to be one who is familiar with accounting and bookkeeping, although his work is not primarily constructive but chiefly critical and analytical. The practical process of auditing involves the use of various methods and expedients which save time or serve as easily available tests. This phase of the subject therefore cannot be fully discussed in the treatment which is here intended, but that treatment, as already indicated, will address itself to the setting forth of the principles of accounting and the way in which they are practically applied, along broad lines.

II. CONSTRUCTION OF THE ACCOUNT.

Object of the Account.

As we have seen, the fundamental problem of the accountant is that of devising a suitable system for recording business facts and their relations, and "business," as we have noted, consists of a process of buying and selling—in a word, exchanging. In the simplest sense of the term, then, a "record" of such operations would be found in a mere statement of what had been done, written down in diary form with no attempt at classification. Thus, suppose a boy buys a stock of one hundred apples for which he pays $3.00 and which he thinks he will sell at five cents each. He might record his operations as follows:

January 1, Bought 100 apples for $3.00.
January 2, Sold 20 apples at 5 cents each.
January 3, Sold 40 apples at 5 cents each.
January 4, Sold 40 apples at 5 cents each.

Here would be a mere summary statement of what had been done. It would be far better than nothing because it would, at least presumably, be an accurate and detailed statement of just what the boy had done. If this were supplemented by any additional facts, such as the record of the number of apples that had rotted or spoiled and had consequently been thrown away owing to inability to sell them, it would give a fair idea of the whole scope of the undertaking. It is evident, however, that if the transactions were numerous the record would become so long and complex that presently it would of itself be valueless, because it would not carry any clear idea to the mind of the reader. It would be of service then only as furnishing material on which to base a further classification or arrangement of the facts referred to. Such a classification might, however, easily be obtained.

Classification of Facts.

The most obvious idea in classifying commercial transactions is to separate them into the two great groups of opposed character already spoken of—buying and selling. If John, the boy of our illustration, should do this at the outset, he might think it well to reserve one page of his notebook for "bought" items and one page for "sold" items. In that case his operations might look like this:

BOUGHT.

January 1, 100 apples	$3.00

SOLD.

January 2, 20 apples at 5 cents	$1.00
January 3, 40 apples at 5 cents	2.00
January 4, 40 apples at 5 cents	2.00

John would now have a separation between his bought and sold items which would be of more value to him as his transactions became more and more numerous and involved more and more kinds of commodities. If, for example, he extended his operations to oranges and bananas and bought the various kinds of fruit, as well as sold them, on different days or some of each on the same day, the classification of bought and sold items would be absolutely necessary, while he would find it further desirable to group each day's transactions separately. At the end of a week or a month, by going through his bought and sold records extending over the period, he could see how much he had expended and how much he had taken in. Supposing that he then took account of stock and found what balance, if any, of the various kinds of fruit remained in his possession, he would have a substantially clear knowledge of what the result of the month's transactions had been.

Losses and Gains.

It would not be long before the fruit dealer, or anyone else engaged in business, would find that there were a number of other items that he must take into account in addition to goods and money. The summary record of

transactions already described would throw no light on anything except the goods he dealt in and the money he received. And even if it were supplemented by a statement at the end of the month or other period showing just what was left of the fruit, the statement would probably prove to be unsatisfactory as a genuine analysis of John's operations. He would find that in the course of his sales he had to take account of the fact that expenses of one kind or another were incurred in doing the business. His food, lodging, clothing, etc., might be reckoned by him as incidental expenses, while the same might be true of such fruit as spoiled while in his possession, thereby resulting in a loss. As a result of considering these factors, it is probable that John or anyone in his position would before long be inclined to modify the general classification of "bought" and "sold" and to substitute something else that would be more inclusive. What would this be? The difficulty which John has encountered in getting a true idea of his business in relation to himself is found in the fact that the classification of "bought" and "sold" merely takes account of goods obtained or disposed of and money received or spent, while what he needs is a statement of all items of cost or outlay or loss involving a reduction of his resources or income and a classification of all items of receipt or gain or advantage representing such income.

Debtor and Creditor.

The terms which have been accepted by the business world as the conventional designation of the ideas just set forth are those of "debtor" and "creditor," usually abbreviated to "Dr." and "Cr." By these terms is meant the comparative showing of advantage and sacrifice to which we have referred. The use of the terms can be illustrated simply, from the theoretical standpoint, by a further development of our illustration about John and his fruit. Let us suppose that during John's transactions with the

100 apples which he has bought, he finds that 10 of them spoil while he is obliged to pay, say, 50 cents for the use of a stand on which to exhibit his fruit to passers-by. Now what are John's groupings or classifications of advantage or sacrifice? He has purchased 100 apples giving in exchange $3.00 in money. He has spent 50 cents for "rent." He has lost 10 apples without any return and he has sold 90 apples at 5 cents each, bringing him in a gross return of $4.50.

It is evident then that he might account for the transactions he has carried on by summarizing at the end of the week or month during which he has disposed of his apples in such a way as to show a condensed grouping of income and outgo. If he were to do this in simple form, he might make the following showing:*

DEBTOR.

January 1, 100 apples	$3.00
January 1, Rent	.50
January 31, Apples lost	.30

CREDITOR.

January 2, Apples sold for cash	$1.00
January 3, Apples sold for cash	2.00
January 4, Apples sold for cash	1.50
Balance in favor of creditor side	.70

From this it is seen that John, the boy of the illustration, regards himself as having received from someone else goods (apples), services (rent), and at the same time he has been subjected to conditions which have inflicted on him a loss of 10 apples which he figures at the cost price of these apples or 3 cents each. In other words he himself, or his business, is obliged to get back from the world at large enough to cover the items of goods, services and loss. In the course of the business transactions he does so recover cash and is therefore credited with the amount of cash thus received, and therefore furnished to the business. The difference or "balance" simply shows whether John

*Assuming that the apples sold are not raised in price sufficiently to make up for the loss through deterioration.

Smith's classification of debtor items exceeds or is less than his classification of credit items. Ordinarily John Smith, for the sake of convenience would be likely to offset these items against one another in a rather more compact fashion and he would want to affix to the statement some title of a descriptive character indicating what the statement was about. Such a statement, might be made out by him in simple form as follows:

JOHN SMITH—HIS BUSINESS FOR JANUARY.

Dr.		Cr.	
January 1, 100 apples	$3.00	January 2, Apples sold, cash	$1.00
January 1, Rent	.50	January 3, Apples sold, cash	2.00
January 31, Apples lost	.30	January 4, Apples sold, cash	1.50
Balance	.70		

Nature of the Account.

From this illustration it can be seen what is the nature of the account. The account is simply a condensed and classified statement of business facts leading to a conclusion. That conclusion is whether one or the other of the sides or classifications in the account indicates an excess of advantage or sacrifice, as the case may be. The account is itself a classification—that is to say, it is about some distinct definite thing. As presented and illustrated above the subject-matter of the account or the thing to which it related was "John Smith, his Business," and the conclusion at which it was sought to arrive was whether the things for which he had become indebted to the community, or, in other words, for which he had been obliged to pay others, were superior in value to the things for which he had been paid by the community or for which he had received cash from others. The classified statement about John Smith and his business rendered it possible to reach this conclusion only in the event that the system of classification adopted was correct, and further in the event that the given items were recorded correctly in accordance with the system which had been determined

upon. It is obvious, however, that the idea of the account may be broadened or narrowed in actual practice according to the particular needs of the matter which is to be dealt with, the idea of the account and the theory of its application to the recording of business transactions being, however, kept the same throughout. In the illustration given above the effort was made to apply the idea of the account to business as a whole, and this was undoubtedly the original or basic idea out of which accounting and bookkeeping were developed, since historically the attempt would be made to develop a system showing the results of business transactions in general, and then to confine them or limit them to particular phases of the undertaking.

The Accounting System.

Before business has gone very far, however, it becomes necessary to apply this idea of accounting to different phases of the business and to recognize that every class of transactions must be looked at in its relation to the business as a whole but must at the same time be treated by itself. This is merely for the sake of convenience and simplicity. The question, therefore, arises: How can an accounting system or system of accounts be devised in order to show not merely the general results of a business but also the effect of each transaction upon the general position of the business itself? It is clear that such a classification of accounts might be worked out from several different points of view according as the business itself varies and according as it is desired to show one thing or another more clearly. This point will be dwelt upon more at length later in the present volume. For the moment it is probably clearest to take one type of business and show how the system of accounting applicable to that business is worked out. There is general agreement that the simplest type of such business, from the theoretical

standpoint, is that of retail trade. It may be asked therefore at the outset how many classes of account ought to be kept by a retail trader like John Smith whose transactions have already been illustrated. The first thing that is sought by all retail traders is to know exactly what their business as distinguished from themselves is doing. It is, therefore, necessary to regard the business as a distinct unit or entity separate from the person of its owner who may be engaged in any number of business enterprises. This implies that in every business it shall be assumed at the outset that the concern starts with a given amount of funds or wealth as a basis for trading and that these funds or this wealth is appropriated exclusively to the uses of the business without being withdrawn save under specified conditions for the personal purposes of the proprietor. Such an assumption gives rise to an account which is usually designated as "capital account," and which is really the account of the business considered as an entity in relation to the outside world. In other words, this capital account shows the relations existing between the business and the world as a whole. Since, as we have seen, business operations give rise to an increase or diminution of wealth, it is evident that at the close of a business period it is desirable to have some account showing the profit or loss for the business period. This account is usually named exactly what its contents imply—that is, "profit and loss." Since the sources of profit and loss may be various, there may be an advantage in sub-classifying this account or in establishing others of the same general type, but designed to show how profits or losses arose. Examples of such are seen in the case of such matters as rent, insurance, etc. All of these accounts, illustrating the relationships between the business or the proprietor of the business and certain more or less abstract ideas or operations, are usually termed "nominal accounts." The word "nominal" is used in des-

cribing them not because they are unimportant but because they are accounts that indicate the relationship of the proprietor or the business with certain names or ideas.

As in the case of John Smith's dealings in fruit, it would not be enough to state how much he had spent or how much he had taken in in cash or even these with the addition of the amount of his expenses for the month or other period, because he might have goods left on hand or goods that had spoiled while in his hands, so that the mere statement of the amount put in and the amount taken out in cash would not necessarily show his exact position at any given moment. It is always important to a business to know exactly where it stands with reference to cash and with reference to goods. Hence in every retail business there are found accounts designed to show how the stocks of certain things owned by the business have been affected by various transactions. In the case of the retail business the most important of such accounts with things are "cash" and "goods" or "merchandise." There may be others, as will be seen later. Such accounts with actual tangible things are usually called "real" or "property" accounts.

In all of the illustrations that have been given thus far it is assumed that every transaction was made for cash, and that there was no particular object in knowing the names of those with whom the dealings were carried on. Thus, John Smith, the fruit merchant, may get his stock of apples from a wholesale grocer, and neither party to the transaction may care to record the name of the other any more than John Smith cares to record the names of the persons who pass him on the street and purchase apples at his stand. It is clear, however, that, in businesses which are operated on any considerable scale, this indifference as to names would not exist, for two reasons: (1) In many cases payment would not be directly made in cash and hence it would be necessary to have some record

of the transaction, while (2) the individuals with whom dealings were carried on might both buy from and sell to the concern so that the latter would want to know the balance of the dealings. For these reasons a third class of accounts will be found in the accounting system of every retail trader. This third class includes the so-called "personal" accounts; that is, the accounts of the business with various individuals or persons.

Accounts Reviewed.

Reviewing what has been said, then, we may state that the accounts of a simple form of business are classifiable under three heads: (1) Nominal accounts which keep track of the results of operations and relationships; (2) real accounts which keep track of the stocks of real objects, including money, goods, etc., owned by the concern; and (3) personal accounts which keep track of the relationships between the business itself and various individuals with whom it has dealings. Under nominal accounts we class capital, profit and loss, and expense of various kinds; under real we class cash, goods, etc.; and under personal we class all accounts having to do with a distinct individual who is named. The object of clear and good accounting is to show at any time the exact position of the business—that is, the actual capital invested in it as augmented by the profit or diminished by the loss for a given period, to show exactly what the amount of this profit or loss has been during the given period as compared with similar periods in the past and to show at any given moment the amount that the concern has to pay to different individuals as well as the amounts that it has a right to claim from other individuals.

The Accounts of John Smith.

Let us now see how these principles would work out in the case of John Smith, the fruit vendor whose transac-

tions we have already described for the month of January. We saw that he originally bought apples to the extent of $3.00. Let us suppose that this is the total amount that he has available for his business operations and that he distinctly sets the sum aside as a basis for trading. If he were to organize his simple transactions upon the basis of an accounting system such as has just been sketched, his "accounts" before he had bought any apples would look like this:

J. SMITH, CAPITAL ACCOUNT.

Dr.					Cr.
			Jan. 1	Cash	$3.00

CASH.

Dr.					Cr.
Jan. 1	To J. Smith	$3.00			

What does this show? Simply that the business considered as a going concern is credited with cash because it has supplied that or has furnished it for business transactions. John Smith, Merchant, has furnished the business $3 of capital so that the account which deals with capital is "credited" with that sum because it has furnished the amount for business operations. In the same way, the cash account carried on its Dr. side an entry of $3, indicating the fact that the stock of cash has been established or has been increased by the sum of cash which has been put into the business by John Smith. Smith might, instead of putting up the "capital" in the form of money have put it up in the form of goods. In that event, the account which would be opened at the start would be—not cash—but that of goods and merchandise, which would show the amount of such goods put into the business in the form of a debtor entry corresponding to the amount thus furnished.

John Smith now spends his cash capital for apples—in other words, he converts his cash into goods. What change

does this make in his account? It affects cash in the following way:

CASH.

Dr.					Cr.
Jan. 1	To J. Smith	$3.00	Jan. 1	By goods	$3.00

All that this shows is that the cash account, which got $3.00 from Smith, has now parted with it by reason of the fact that goods have been received by the business in exchange for such cash. Moreover, since the business has now come into the ownership of the apples or goods, a goods or merchandise account will be opened as follows:

GOODS.

Dr.					Cr.
Jan. 1	To cash for apples	$3.00			

There has now been no change whatever in the capital account. The capital remains invested in the business and the only change in the situation is that the items obtained with the capital have changed in form, becoming apples instead of cash.

We saw that Smith had to pay 50 cents for the rent of his fruit stand. If this were properly recorded it would appear in an account as follows:

RENT.

Dr.					Cr.
Jan. 1	To use of premises	$0.50			

The account headed "Rent" carries the use of premises for January upon the debtor side because some value has been received by the business. The value received is the actual use of the stand. This service of furnishing the stand to the business or allowing the stand to be occupied is as much an element of value as the apples that were received by the concern. The fact that the apples had been received was indicated by an entry on the debtor side of the

goods account. In the same way the fact that the use of premises has been received is carried on the debtor side of the rent account. Of course Smith has to pay for his rent in cash and that implies that at whatever period in the month he makes payment he will reduce the cash on hand. Supposing that he makes payment in advance on January 1, he can do so out of the first proceeds of his sales. In our former illustration we assumed that on January 1 he sold 20 apples at 5 cents each, making $1. This evidently meant that at the close of business on January 1 he had reduced the stock of goods or apples on hand by 20, valued at $1.00 for selling purposes, had correspondingly increased the stock of cash and had incidentally paid 50 cents for rent. It is clear that the rent account, which has already been entered with the use of premises for January, is not affected by these transactions. Cash and goods then are the only accounts that are changed and they will stand as follows:

CASH.

Dr.					Cr.
Jan. 1	To J. Smith	$3.00	Jan. 1	By goods	$3.00
Jan. 1	" goods	1.00	Jan. 1	" rent	.50

GOODS.

Dr.					Cr.
Jan. 1	To cash for apples	$3.00	Jan. 1	By cash	$1.00

Smith's subsequent transactions, as we saw, were all of this same description; that is, sales of apples for cash, so that the entries are thereafter all the same so far as sales are concerned. We saw, however, that at the end of the month he found 10 apples in an unsalable condition. How should he account for these? He could do so only by opening an account for that special purpose or by representing the loss thus incurred as an entry under his goods account. Supposing that he were to adopt the latter method, what change would it make in the goods account? He

would have to regard the apples as having been sold or parted with and consequently would be obliged to credit goods account. There would, however, be nothing coming into the business in return and as a matter of fact he might find it more expedient to represent this loss of apples under the head of a special account for the purpose or under the head of the general profit and loss account. If he did the latter, how would the profit and loss account look? As follows:

PROFIT AND LOSS.

Dr.					Cr.
Jan. 31	To loss on fruit	$0.30			

Here the apples are represented on the debtor side of the profit and loss account because the abstract conception profit and loss is thought of as having received something from the business. It has received the apples that were lost or spoiled—that is to say it is responsible to the business for the sacrifice involved in losing the apples. But at the end of the month is there not some other entry to be made in profit and loss? Obviously that must be done if the business has gained anything. What has the business gained? It has sold all of the good apples remaining after deducting those that were spoiled. It has consequently received a given amount of cash in exchange while it has no goods on hand. It is possible, therefore, to contrast the position of the business at the end of the month very exactly with its position at the opening of the month by consulting the goods account. The account (supposing the transactions to have been the same as those represented on page 12) will be as follows:

GOODS.

Dr.					Cr.
Jan. 1	To cash	$3.00	Jan. 1	By cash	$1.00
			Jan. 3	" cash	2.00
			Jan. 4	" cash	1.50
			Jan. 31	" loss on spoiled goods	.30

From this it is seen that whereas the total amount of cash expended for the original stock of goods (apples) was $3.00 the total amount which has nominally been realized from the sale of these same goods or such of them as remain fit for consumption is $4.80. The goods or apples have all been disposed of so that none remain on hand available for sale. It is clear then that the difference between the two sides of the goods account represents the excess for which the apples have been sold over and above the price that was originally paid for them. This difference is seen to be $1.80 in favor of the creditor side and this represents the income or profit for the business. To complete profit and loss account we shall now simply credit that account with the $1.80 which represents the balance in goods account (having of course debited goods with this same amount), while on the debtor side we shall enter all those entries which represent losses or expenditures. In the illustration we have chosen, the only losses or outlays are those which arose from the spoiling or decay of fruit and the payment of rent as an expense. The profit and loss account then will appear as follows:

PROFIT AND LOSS.

Dr.					Cr.
Jan. 1	To rent for month	$0.50	Jan. 31	By goods, gross profit on sales	$1.80
Jan. 31	" loss on fruit	.30			

The difference between the debtor and creditor sides of the profit and loss account is thus seen to be $1.00. This then is the net profit or gain on the business after allowing for losses and it may be transferred to J. Smith's capital account as a credit representing the amount of cash earnings which have been realized and added to the amount originally in the business. As that amount was $3.00 his net worth should now be $4.00. We may now gather the accounts of John Smith together in the following

form, employing however certain rulings and notations which will be explained in Section III (pp. 35, ff.).

CAPITAL.

Dr.					Cr.
Jan. 31	To balance carried down	$4.00	Jan. 1	By cash	$3.00
		$4.00	Jan. 31	" profit and loss	1.00
					$4.00
			Feb. 1	By balance brought down	$4.00

CASH.

Dr.					Cr.
Jan. 1	To J. Smith	$3.00	Jan. 1	By goods	$3.00
Jan. 1	" goods	1.00	Jan. 1	" rent	.50
Jan. 3	" goods	2.00			
Jan. 4	" goods	1.50	Jan. 31	" balance carried down	$4.00
		$7.50			$7.50
Feb. 1	To balance brought down	4.00			

GOODS.

Dr.					Cr.
Jan. 1	To cash	$3.00	Jan. 1	By cash	$1.00
Jan. 31	" profit and loss	1.80	Jan. 3	" cash	2.00
		$4.80	Jan. 4	" cash	1.50
			Jan. 31	" loss on spoiled goods	.30
					$4.80

RENT.

Dr.					Cr.
Jan. 1	To use of premises	$0.50	Jan. 31	By balance to profit and loss	$0.50
		$0.50			$0.50

PROFIT AND LOSS.

Dr.					Cr.
Jan. 1	To rent for month	$0.50	Jan. 31	By goods, gross profit on sales	
Jan. 31	" loss on fruit	.30			$1.80
Jan. 31	" balance to capital	1.00			$1.80
		$1.80			

It will be observed that the sum total of the debtor entries in these accounts of John Smith's for the month of January, total the same as the creditor entries. His assets at the end of the month consist simply of cash just as they did at the beginning and the increase in cash is equal to the increase in the capital or net worth of John Smith. Every transaction was analyzed into two parts

and gave rise to two entries, one on the debtor side of some account and one on the creditor side of some account. This is what is meant by the "double entry" system or principle in accounting and bookkeeping. Every transaction gives rise to two opposed entries in the accounts. When we say "two entries" we do not necessarily mean two in the literal sense but rather two opposing groups of entries. A transaction may be analyzed into one entry on the debtor side of the books and two or more on the creditor side or vice versa. The principle simply requires that the total value of the entries shall be the same on the debtor side of the accounts as on the creditor. In closing the accounts for the month the process of completing the entries and transferring balances gives rise to various technical processes necessitated by bookkeeping practice. These will be sketched in the following section.

III. KEEPING THE BOOKS.

Practical Problems.

Supposing that business has developed a perfect theoretical system of keeping its accounts, the question will always arise in every concern how practically to carry on the actual records in such a way as to save time and labor so far as possible and at the same time to insure the maximum of correctness and detail. Every bookkeeping system is more or less of a compromise because no concern is willing to spend more than is necessary upon the keeping of elaborate records however desirable such records might theoretically be. It is true, however, that many concerns, accustomed to old and traditional methods of bookkeeping and accounting, do maintain a variety of records that are of no special service, while on the other hand some firms, in their desire to simplify and avoid the maintenance of unnecessary records, cut out links in the accounting system that cannot well be dispensed with.

This is unfortunate from a good many standpoints, because the ordinary concern is frequently obliged to make use of its records of past transactions, either for the purpose of establishing various points in legal proceedings or of ascertaining what its practice has been on former occasions where given problems were presented, or for the purpose of convincing a prospective buyer of the exact nature of the profits that have been realized. It is not possible to lay down any hard and fast lines or rules with reference to the exact number of books or records that a concern shall keep or to specify which one can safely be omitted, or to indicate certain of them as absolutely necessary and indispensable. Experience shows what books must be kept by a concern and what ones may with profit be added; it also indicates the points at which the concern may more or less readily dispense with certain classes of records. Something further will be said on these points later on in our treatment. At this point it is enough to say that, contrary to many assertions on the subject, it is not possible to lay down any general system with regard to this matter but that there are, however, certain kinds of books which are traditional or conventional and which are found in some form in the majority of concerns.

Traditional Books.

The traditional books that are carried on by the ordinary retail concern are the "day book," "journal" and "ledger." Why should these have come into such general use and why are they employed? Their use is as already suggested largely a matter of convention and convenience. This will be seen by a brief sketch of the contents of these books. As was noted in our early analysis of the transactions of John Smith, fruit vendor, it might easily have been determined by Smith, had he been so disposed, to get along with merely a diary or record indicating the character

and extent of his transactions. We saw that in his case, with very simple operations, that might have sufficed. Had he done so, he might have given to his record the name "Day Book." A day book is, as ordinarily employed, nothing more than a summary or outline statement of the various transactions of the concern, they being recorded there for the sake of convenience, in the order in which they occur and, in small businesses, without any effort at classification. A day book is usually ruled with columns designed to enable the proper recording of figures and their totaling. In other words it is nothing more than a blank or record book suitably ruled for the sake of convenience. Suppose a concern had a month's transactions thus recorded in a day book. It would have no classification or grouping of the transactions, but on the contrary it could not see the results of what had been going on, even in any one phase. For instance, if Richard Brown had bought steadily of the concern every day for a month and others had done the same, the transactions of Brown and others would simply be set down in chronological order. If a system of accounting were to be employed, the segregation of the various items and their classification as accounts would be necessary. This could be done by simply transferring the items from the day book to another book in which the proper classification would be made.

The Ledger.

The book to which such transfers would be made is called the "Ledger." The ledger contains no new facts that are not recorded in the day book, but merely presents the same facts rearranged in such form as may be desired. The form ordinarily desired is a grouping under the real, nominal and personal accounts that have already been described in Section II. Every ledger, therefore, contains the customary nominal accounts such as capital, profit and loss, etc., the customary real accounts such as cash,

goods, etc., and then as many personal accounts as there are persons with whom the firm has had dealings which it desires to record in this detailed way. The ledger then is merely a book in which the transactions of the day book are assorted under the heads Capital, Profit and Loss, Cash, Goods, Richard Brown, etc., etc., etc. The process of transferring the items from the day book or any other book to the ledger, is called "posting," and the ledger is said to be "posted" when the entries that have been made in other books have been transferred to its pages. The process of posting evidently implies the recognition of the different accounts that are affected by a given transaction and the transference of the proper entry to every account which is thus thereby altered. In some cases this is not an easy thing to do correctly, while it may be that the day book does not give as full information about the nature of the transfers made as is desired. For that reason, another book is frequently introduced, intermediate between the day book and ledger. This is called the "Journal."

The Journal.

The journal is, as already indicated, little more than a means of sifting out the transactions rather better than could be done mentally, and serves the purpose of comparing the items for transfer by stating them in different form. There might be no particular reason for using the journal if the nature of the entry in the day book could always be recognized at sight and a corresponding transfer to the ledger could be made. But, as already indicated, this is not practicable, and hence the use of the journal. To the beginner in accounting or bookkeeping the use of the journal is rather necessary because it serves as a means of analysis and enables the testing of the work as well as its review for the purpose of ascertaining whether errors have slipped in or not. We shall speak of the journal (and of the other books) more fully at a later point. At

this point it is not necessary to do more than to indicate clearly the difference in the way in which given entries appear in the day book, journal and ledger. For example, the following would be a typical day book entry:

Jan. 1	Bought goods of Richard Brown..................................	$100

In the journal this would appear as follows:

Jan. 1	Goods account—Dr. To Richard Brown	$100.00	$100.00

This transaction is said to have been "journalized." What has been done has been to indicate that the transaction "Bought goods of Richard Brown" implies that an entry will be made on the debtor side of goods account and a corresponding entry on the creditor side of Richard Brown's account. This is for the reasons already sufficiently stated. Goods account is increased by the amount of goods received and is therefore a "debtor" to the concern, while Richard Brown has furnished the goods and is therefore "creditor" of the concern to an equal amount. The journalizing is merely the analysis of the transaction, to indicate that the accounts affected or modified are "Goods" and "Richard Brown," and that an entry of $100 is made in the one on the debtor side and in the other on the creditor side. If the item thus journalized were to be transferred to the ledger it would appear thus:

GOODS.

Dr.					Cr.
Jan. 1	To Richard Brown	$100.00			

RICHARD BROWN.

Dr.					Cr.
			Jan. 1	By goods	$100.00

Evidently here, as remarked before, the service of the journal is merely that of convenience. There is in this case no other reason for its maintenance although in the case of some other transactions the reason for keeping

it is more obvious as will be seen later on.* Sample pages of day book and journal are seen below.

Classification of Books.

We stated earlier in this discussion that the books, day book, journal and ledger, were conventional or customary books. In other words, the necessities of a business may be such as to indicate that these books are not adequate or sufficient or that some of them may safely be omitted. For instance, it is entirely conceivable that a

Sample Page of Day Book.

1910		
Jan. 1	John Smith begins business with cash capital..........	$3.00
" 1	Bought goods for cash..............................	3.00
" 1	Sold goods for cash................................	1.00
" 1	Paid rent in cash, for January.....................	.50

Sample Page of Journal.

		Led. Fo.	Dr.	Cr.
1910 Jan. 1	Cash acct.—Dr.		$3.00	
	To John Smith Capital acct.			$ 3.00
" 1	Goods acct.—Dr.		3.00	
	To cash			3.00
" 1	Cash acct.—Dr.		1.00	
	To goods acct.			1.00
" 1	Rent acct.—Dr.		.50	
	To cash			.50

Note. Dates of transactions are placed in the column at the extreme left. As transactions are analyzed for the ledger the debtor entry for each transaction is entered on the upper line with the corresponding creditor entry (or entries) below. The sums entered are written in separate Dr. and Cr. columns at the right. The column headed "Led. Fo." (signifies Ledger Folio) is intended for the references to ledger pages where the transactions are posted.

* The illustrative accounts presented in Section II, p. 23, are ledger accounts.

business might be so simple as to dispense entirely with the day book and journal. But the probability is that the reverse will be the case; that is, that more rather than less books will be needed. What direction will this increase in books and records take? Obviously it may take the direction of adding or developing some entirely new books, or it may take the direction of sub-classifying the old ones. The latter case is the simplest and most easily understood and will therefore be dealt with first. It is easy to see that the mere work of recording transactions in the day book may be very heavy indeed where the transactions are exceedingly numerous. It may be so heavy as to make it desirable to have two or more day books, in order that two or more clerks may work simultaneously at the recording of the transactions. If that were the case, it would be entirely possible to have the two or more clerks working at exactly the same duty—the recording of all kinds of transactions indiscriminately in chronological order. This would have the disadvantage of rendering it hard to journalize or post from two or more books and yet have the journalizing or posting done in chronological order in the journal or ledger. Moreover, a valuable opportunity for classifying transactions would have been lost. A better classification would be made by instituting a "sales day book" and "purchases day book" or "purchases book." In the sales day book would then be recorded all selling transactions. In the purchases book would be recorded all buying transactions. There would thus be a rough classification of transactions and in addition the element of greater convenience would have been attained. There would be no reason whatever why the sales day book should not be subdivided to any extent by establishing a sales day book, say, for every department of the business. Thus, if the concern were a department store, it might theoretically have a sales day book for its grocery department, one for its dry-goods department and one for

its furniture department. In the same way, there might be purchases books for each of these departments. The subdivision here is merely a matter of convenience and involves no change of theory. All of these books are books of "original entry," and in all bookkeeping transactions involving the whole business of the concern they should simply be regarded as mere subdivisions of the original day book and as constituting together, when taken as a whole, exactly the same thing in relation to the business and its accounting system as the original day book.

Classes of Ledgers.

What has been said of the day book applies to the ledger in exactly the same way. In a large concern, it may be very difficult to make use of the ledger in such a way as to get all transactions quickly and promptly posted, because the work is too much for one man. Similarly it may be desirable to have the ledger in more than one place at the same time, so that more than one actual book is needed. The classification of ledgers is therefore customary. This classification may proceed upon the same lines as did that of the day book—there may be purchases ledgers, sales ledgers, etc., to any number. The purchases ledgers would simply include accounts with individuals from whom purchases had been made. The sales ledgers would include accounts with individuals to whom sales had been made. Or, for the sake of convenience it might simply be desirable to have the ledgers alphabetically arranged. Thus there might be two ledgers—one containing all accounts beginning with a letter from A to M, the other including all accounts beginning with a letter from N to Z, or if the business required it there might be 24 ledgers each including the accounts beginning with a letter of the alphabet, and so on. All this is merely matter of detail. It is clear, however, that no matter how extensive the business may be it will ultimately desire to have

the results of its accounting condensed, since the final object of all accounting is to show net results. This means that somewhere or other the so-called nominal accounts, which show the changes in capital, profit and loss, etc., must be combined. This is done in what is usually called the "general ledger." In this general ledger are ordinarily represented the combined results of the other ledgers, as purchases ledger, sales ledger, etc., or "A" ledger, "B" ledger, etc. By opening an account with each of these ledgers in the general ledger, there may be presented in the general ledger the combined results of the others and along with them are given the general or nominal accounts which apply to the whole of the business, as capital, profit and loss, etc. In any bookkeeping or accounting system, the whole set of ledgers is simply treated as a unit just as would have been done with the original simple form of ledger, in which all ledger accounts were consolidated into one book. Where the general ledger is used, this gives in summarized form the results of all the other ledgers and in such a case the general ledger stands in the same position as did the original ledger. The sub-classified ledgers are then nothing more than books kept for the sake of convenience in making records.

While there is no reason why the journal should not be sub-classified, and as many journals kept as there are subdivisions of the day book, that is not usually necessary, and except under special conditions, which may be referred to at a later point, the journal usually retains its position as a single intermediary book.

Other Books.

As has been seen, the most obvious and natural classification of books which suggests itself in the case of the large business is that which grows out of the division of the various books for reasons of convenience as indicated. But this is by no means the only way in which books may be

added to the number. For example, it may easily be that a ledger account becomes so long and so highly complicated as to make it desirable that this account shall be taken out of the ledger and nothing entered in the actual ledger itself except totals for given periods. The best example, perhaps, of this kind, is seen in the general use of the "cash book." Where a cash book is kept, as it usually is, it is nothing more than the ledger cash account bound up by itself and treated as an independent book. This may be done for exactly the same reason which led to the original sub-classification of the day book. It may be desirable to have the cash book broken up so that several persons can work on it, or at all events to have it separated from the ledger so that access to it can be easier and so that a long and very detailed account need not be kept in the ledger. Exactly the same thing that is true of cash may be true of any other ledger account—that is to say, a special book may be designated for the keeping of that account. The two books which are customarily seen are the so-called "bills receivable" and "bills payable" books, these books being records of the bills receivable which the firm owns, or the bills payable for which it has rendered itself liable but which it desires to have recorded in convenient form with all particulars of the date when due, the rate of interest paid, etc. Corresponding to each of these books, is of course an account in the ledger which simply gives in summary form the totals of the operations recorded in the bills payable or bills receivable books. But it should be understood that these books are really kept in lieu of ledger accounts and represent such ledger accounts. Beside books of this sort, there may be various other books growing out of the necessities of the business, but they are all either ancillary to, or parts of, the original books. Thus, for example, there may be an "invoice" book into which are pasted invoices, etc. This then is really a way of filing or recording. Other books

that may be kept are books designed to record returns of goods or goods returned by the firm to others, petty cash book, which is really ancillary to the cash book itself, etc.

Relation between Books.

As has been seen, the process of "keeping" the books is a process of recording transactions originally, and then of passing them through the various forms of records until the whole set of records is complete and satisfactory. What does this process of keeping the books imply? In the first place, it of course means that every transaction involving the transference of values must be recorded. Secondly, it means that every transaction thus recorded must be put through identically the same process of analysis, transfer, and ultimate record as every other. It is only in that way that the books can be made to show the results of the business with accuracy, and of course under the system of "double entry" earlier described, it is only in that way and on those conditions that the books can be made to "balance" and thereby give prima facie evidence of the fact that they have been correctly kept. The keeping of the books thus necessitates a recognition of their relation to one another and of the ways in which transactions must be recorded in order to maintain the same relationship between them that was established at the outset. Every transaction must figure in the same way and to the same extent in all the books through which it is passed, or in other words the change in transactions that is brought about in passing them through the various books is merely a change in method or analysis and not a change in substance. We have already referred incidentally to a few of the technical terms used in connection with the keeping of the books but it is worth while to speak of these once more at this point, and to add one or two ideas not thus far referred to. The books are said to be "opened" when the "opening entries" have

been made, that is to say when the facts about the organization of the business have been properly recorded in each of the books and the concern is ready to begin operations. Or the books may be said to be technically opened when they are simply provided, furnished with the proper rulings and when the names of the accounts, etc., that will certainly be needed have been set down. As seen at an earlier point, "journalizing" is the transferring of the items recorded in the day book to the journal and the placing of them in journal form, while "posting" is the name given to the process of transferring the items to the ledger, arranging them there in their proper shape and under suitable headings. In general, the term "posting" is applied to the keeping of any book up to date with all the transactions recorded in it that properly belong there, although, technically speaking, the word is used specifically of the ledger.

Balancing and Closing.

Two terms, however, both of great importance, have not yet been taken account of. These are "balancing" and "closing." The two need to be studied in close connection with one another both with reference to their definition and to the processes to which they relate. By balancing is meant the bringing of the various accounts to a balance—that is to say, the ascertainment of the amounts that are required, whether on the debtor or creditor side, to be entered in order to make the two sides foot up the same amounts. An account is said to be balanced when the additions of both sides have been made, the difference between them taken, and this sum written on one side or the other—reading when on the debtor side "To balance ......$ " and on the creditor side "By balance ......$." The balancing of any given account is thus a comparatively simple, almost mechanical, operation.*

* See illustrative accounts at the end of Section II, p. 23, where the simple transactions there presented are balanced.

But the balancing of the books as a whole is more difficult both theoretically and practically. As has been seen, the day book is merely a record of transactions and the sum total of its columns is nothing more than the sum total of all operations performed or of all operations belonging to the particular class or group of operations to which a section of the day book is devoted. When we come to the journal or ledger the case is different. As was seen in the discussion of the journal, transactions are there arranged in double columns with a view to making them ready for the ledger. These debtor and creditor columns in the journal should therefore total the same, inasmuch as under the theory of double entry every debtor entry is offset by a creditor entry somewhere. In the journal, every debtor entry is immediately offset by a creditor entry or series of entries recorded close at hand in the parallel column. The balancing of the journal, therefore, is effected by merely totaling the columns of the book and ascertaining that the debtor total equals the creditor total. In the same way, it should be true that in the ledger the total of all debit items should be the same as the total of all credit items. This would mean necessarily that the total of all debtor balances in the accounts should equal the total of all creditor balances in the accounts. The first step in balancing and closing the books is usually an effort to test the correctness of the work by drawing off what is called a "trial balance." This is done by writing down on a sheet of paper the name of each account with the total of its debtor postings in a column headed Dr. and the total of its creditor postings in a column headed Cr. When this has been done for every account in the ledger and the sum total has been added the two columns should present exactly the same total. If every transaction has been passed through the journal, the total of the debtor entries in the journal should be the same as the total debtor entries in the trial balance while the total creditor entries

in the journal should be the same as the total creditor entries in the trial balance, the two being of course equal to one another. When this result has been arrived at, the prima facie evidence of the correctness of the bookkeeping has been afforded. It is then possible to go on and complete the process of "closing." This may be defined as simply the completion of the accounting process by transferring those balances which show results of the business process to the nominal accounts (profit and loss, and capital) to which they are related, thereby rendering possible an idea of the result of the operations for the fiscal period.

Technique of Closing.

But how is this "closing" carried out? In the case of the retail business which we have selected as the basis of our reasoning, the process of closing consists of two main operations: (1) The completion of profit and loss account, and (2) the transfer of profit and loss results to capital account. The latter step is taken in order to show what addition to the net worth of the business or what subtraction therefrom has been brought about by the transactions of the fiscal period. The process of completing the profit and loss account, which we have referred to as the first step, involves, however, one or two antecedent operations. What is necessary in order to complete the profit and loss account? If there had been accounts like rent, taxes, insurance, etc., in which the entries are all on one side, namely, debtor entries, these accounts can be balanced only by "entering" a corresponding creditor entry in the opposing column merely for the sake of formally "closing," and then "transferring" the balance to profit and loss. In profit and loss it appears on the debtor side as a "loss," being simply entered there under the head of the account from which it is drawn. The debtor column of profit and loss is thus nothing more than a summary

of the debtor totals in the various expense accounts, as rent, taxes, insurance, etc. If the business is simple these entries will have been written up in profit and loss account direct from time to time as the expenditures have been made. But if the items have been numerous so that they have been kept under separate headings in the way just indicated, they appear simply as subdivisions of profit and loss account and in that event the process of transferring, of which we have spoken, is necessary. If this has been done and if all other accounts have been previously balanced as indicated, the only thing that remains uncertain is the quantity of goods or property remaining on hand. This can be ascertained only by directly finding out what it amounts to—a process which in retail business is described as "taking an inventory." The goods account when originally opened of course carried on its debtor side the total amount of goods that had been bought by the business and for which therefore the account itself was theoretically "debtor," or indebted to the business. If less than the total amount of goods has been sold, then the sales items (which have been entered on the creditor side) will be less than the total amount of goods. By ascertaining the original cost value of the goods remaining on hand and entering this on the creditor side along with the sales, the two sides of the goods account will deal with exactly the same amount of goods. The debtor side will show the amount of goods bought at their cost value, while the creditor side will show the amount of goods sold at their selling value plus the goods remaining on hand at their cost value. The creditor side then would be greater in its total than the debtor side by precisely the excess amount over cost that has been realized on those goods that have been sold. If the goods have been sold for less than cost, the debtor side would be greater than the creditor side and this would mean a loss to the business instead of a gain. It should be added that in

many businesses stocks of goods kept on hand deteriorate in value, and that in taking inventory it may be better to represent the goods at their cost less depreciation; that is, if they are vegetables and some have rotted, they may be represented at cost minus a discount representing decline in value. It may conceivably be true that where this is done the loss due to deterioration of goods will be so great as to offset the gain due to the sale of some goods for more than their cost. In that case the account will show a loss. But at this point, for simplicity's sake, we will not contemplate such a condition, but will assume that the goods are of a kind that will not deteriorate and that they may therefore be represented in the inventory at their exact cost value, while the goods that have been sold are assumed to have been sold for something more than cost. In that case the balance of goods account is on the creditor side and represents a gross profit. In balancing goods, an entry to balance is therefore placed on the debtor side of the account and an equal entry is transferred to the creditor side of profit and loss because it represents profits derived from the sale of goods which constitute what profit and loss account "gives" in the technical sense, and out of which this account has to pay the debtor items which it has "received" in the technical sense, such as rent, taxes, wages, etc., etc. What is the next step in the process? Profit and loss account is now merely a summation of the amounts that have been paid out without getting any tangible return, that is, that constitute expense, and of the items that represent receipts over and above what represents actual cost of goods. If there were any other items of income or expenditure, they would have to be similarly recorded in profit and loss. For example, if the business sold services of some kind—as in the case of a firm of lawyers—the balance of the accounts representing services would have to be transferred to profit and loss just as was done in the case of goods.

Supposing, however, that profit and loss has been made a complete summary of the transactions, this must mean that the difference between its two sides is the net profit of the concern; that is, the gross profit minus the expenses, and is therefore a net addition to the wealth or property or capital of the proprietor. In order to show the results, then, this balance of profit and loss account (which if the business is a profitable one is found on the debtor side, the creditor side being the larger, so that the debtor balance is a profit) is transferred to capital account and is there placed upon the creditor side, being therefore added to the original entry which was made at the beginning of the business period. This gives a total of net worth. If money is taken out of the business by way of dividends or profits, that, of course, has already been done, and a proper showing has been made in profit and loss under the head of debtor entries or expenses. The amount that is carried to capital account as a net profit at the last is, therefore, an actual net addition to capital and is so represented. It is now possible to balance the capital account in the formal way by simply making a balancing entry on the debtor side, which represents the total amount of capital continued in the business, and this, therefore, constitutes the capital to be used for the next fiscal period and which is the first or opening creditor entry for the next fiscal period.

Balance Sheet.

When the books have thus been closed, it is desirable to make out what is called a "balance sheet," in order to state the condition of the business in such a way as to indicate to the business man himself or to the person whom he desires to inform, what the precise position of the business is. The question may be asked whether this object has not already been obtained in closing the books, since that process has resulted in showing the net capital of the

business. The answer is that the closing process, resulting in writing up and closing the capital account, does not sufficiently show the results, for the reason that it does not indicate the form that the assets and liabilities of the concern have assumed. For instance, if the business started off on an actual cash basis, its capital was all in the form of cash, but at the end of a business period such as a year, it may be, and probably is, in a very different form. It is now likely to consist in part of cash, in part of trade accounts and in part of unsold goods. Against these there are probably claims payable by the concern for goods or services or other items of liability. The balance sheet is a comparative showing of such assets and liabilities. On the liabilities side, are set down the amounts that the business owes and on the assets side the amounts that it possesses or that are due it. It is customary to say that the credit balances in the ledger constitute the liabilities, while the debtor or debit balances of the ledger are assets and that by taking the debtor balances and adding them, the showing of assets is made, while, by taking the credit balances, adding them and combining with capital, the showing of liabilities is made. The difference between the sum of the debtor balances and the sum of the creditor balances should be equal to the total capital as found in closing capital account and this should afford a final check of the accuracy of the bookkeeping operations. Why this is, is easily understood when it is remembered that capital account, as closed, is simply the original credit entry in capital augmented by the net balance called profit which has been obtained by closing up goods account, transferring it to profit and loss and there offsetting it against the expense items on the debtor side of profit and loss. The balance sheet, which is thus the combined showing of the business, would in any except a very simple business, be long and unwieldy and would thereby defeat its own purpose, which is to supply a bird's-eye view of the situation,

if every item were named in the way that has been indicated. In the ordinary trial balance, therefore, for a business of any considerable size there is usually found simply a summary of classes of accounts. Thus on the assets side may be found such groupings as "Due from sundry debtors or customers," "Cash on hand and in bank," etc., while on the liabilities side may be found such groupings as "Due sundry trade creditors," "Due on short-time loans," etc., "Capital," and the like. Thus the particular items that go to make up the assets and liabilities are not enumerated but are simply arranged by great groups. In this way, there is presented to the proprietor or to the outsider who is to be informed, a clear-cut view of the position of the business. The only thing that he now lacks in order to form a definite idea of the situation is a knowledge whether the assets of the concern are worth what they are represented to be. For example, the concern may not have deducted from its statement of goods on hand the discount which must unquestionably be allowed for in view of deterioration. This would mean that the capital account was vitiated to some extent because it was made to show a larger amount of net worth, partly consisting of goods, than could be realized. So, also, some of the assets consisting of debts due the concern from customers may be worthless or uncollectible and yet may be carried on the books at their full face value. These are points on which the accounting system affords no light and about which knowledge can be obtained only through an intimate examination of the assets themselves, with a view to ascertaining whether there are elements of deterioration or loss which have not been made obvious in the accounting system as carried on. If there are, the meaning is that the accounting system has not been sufficiently fully organized and that the books therefore do not tell everything that they should tell about the business.

IV. CAPITAL.

Thus far we have spoken first of the construction of an accounting system, and then of the keeping of certain books designed to record the facts or data which are fitted into this system, in such simple terms as were necessary in order to convey the bare outline theory of the subject. This was necessary in order to establish a basis for the further discussion of the theory of accounting in more general and technical terms. It is now time to take up in greater detail, and with a more analytical method, the broader questions surrounding the various accounts and to show how these must be dealt with.

The Capital Account.

In speaking of the simple transactions which were assumed for purposes of illustration in our earlier discussion, it was noted that the fundamental problem which the merchant always has in mind is whether or not his capital has been increased or diminished. In speaking of bookkeeping we showed that the capital account is theoretically the first to be opened and the last to be closed. In making a more elaborate analysis of the question of capital, it is therefore worth while to bear these facts in mind, remembering that it is around the capital accounts that the accounting and bookkeeping process revolves. Capital account when analytically discussed, however, implies considerations affecting a number of others. But in the first place it is necessary to take up the simple assumptions upon which we based our earlier discussion and to see how far they must be modified in order to apply them in practice.

How Capital Is Contributed.

The first assumption thus far made, and the one which naturally suggests itself, is that capital is put into a busi-

ness by some individual who designs to use it in the conduct of that business. This, however, is not necessarily the case. Today the rapid rise of the corporate method of doing business has brought it about that a considerable number of businesses, perhaps a majority, are organized as corporations. Recent investigations by the Federal Government have shown that there are 400,000 such corporations organized in the United States today. A corporation consists of individuals, to at least a specified number named in the law governing incorporation, who thereby become participants in the affairs of the concern and who jointly contribute its capital. If there are not very many such persons and if they contemplate the retention of the active control in their own hands, they may prefer to form a partnership. But whether the business is organized as a partnership under the laws of the state in which it is created or as a corporation under the law of incorporation in that state, the point just noted is the same, as the capital is contributed by several persons who become joint contributors and joint participants in the business. In any of these cases the capital account is the same in its essential nature, but where there is more than one person involved there arises an additional problem of keeping track of the different relations to the business which are occupied by the various persons who participate in such ownership. Fundamentally, capital account remains unchanged in its essential nature. If John Smith is alone in the business his capital account bears the title:

John Smith, Capital Account.

If John Smith and Richard Brown are jointly engaged the capital account is entitled:

Smith & Brown, Capital Account.

If they are incorporated along with a number of others the title may be:

The Smith & Brown Co., Capital Account.

Taking up first the case where two or more persons are united as partners, it is clear that their relations to the business may be sufficiently indicated by subdividing the capital account into as many separate sections or divisions as there are partners. Thus under the heading "Smith & Brown, Capital Account" there might be a sub-heading "John Smith" under which would be entered the amount of capital contributed by Smith at the start and another sub-heading "Richard Brown" in which would be entered as a credit the amount of capital originally contributed by Richard Brown. Then, when the profits are to be carried to capital account from profit and loss, they will be apportioned between Smith's subdivision and that of Brown, according to the terms of the original agreement. If Smith and Brown are equal partners and are to share equally, one-half the net profits will be credited to each. Or, if by virtue of some special agreement set forth in the articles of partnership, one is to be favored above another, the entry will be made upon the proportionate basis which is thus indicated—as two-thirds to one, and one-third to the other. It is entirely possible that the individual or partners who are in control of the business may one or all desire to draw some cash from time to time. If John Smith, for example, being alone in the business, desired to do so, the proper entry would be a debit entry on the capital account which would amount merely to a statement that he had reduced his capital by that amount. The same thing is true where two or more partners are engaged. By simply debiting each with the amount he draws, the net reduction effected in his capital is indicated and the corresponding change in the distribution of profits will be determined either by reference to the partnership agreement or by reference to some oral or other understanding. If the individual or individuals who are conducting the business are likely to draw out money quite frequently in small sums, it may be worth while in order

to avoid making the capital account long and complex to open what is called a "drawing" account. This account is nothing more than a memorandum carried for the purpose of keeping track of numerous debit items which would otherwise appear in capital account. At the end of the year or other fiscal period, the total of these debit entries in drawing account is transferred to the debit side of that section of capital account which belongs to the particular partner whose transactions are recorded. After the books have been fully written up, the sum total of the net capital shown in each of the partner's subdivisions indicates the gross capital of the concern. The situation is more complicated when the business assumes a corporate form. This is because of the conditions surrounding the corporate type of organization.

Corporation Capital Accounts.

Suppose it has been determined to organize the Smith & Brown Company, a corporation. Articles of incorporation are prepared and the concern is legally incorporated. In order to become thus legally incorporated, it is obliged to fix as a definite sum the amount of its capital or at all events to name the maximum amount of capital it designs to employ. Such nominal capital is described as the "capitalization" of the concern and may or may not be fully paid up. It is at all events the named valuation of what is being put into the concern by those who start it. It is customary to divide this capitalization into so-called "shares," each of which indicates a distinct fraction of the total capitalization. It would be theoretically possible to have shares of stock issued as "one one-hundredth part of the Smith & Brown Company" or one one-thousandth part, but in practice, under existing law, it is customary to assign to each share of stock a nominal face, or par, value of its own. The figure which is most commonly used as the par value of a share of stock is $100. Suppose

that Smith & Brown were incorporated for $10,000 with shares at a par value of $100. This would mean that in all there were 100 shares outstanding, each of the nominal value of $100, or, in other words, that the owner of each share was entitled to one-hundredth part of the value of the concern. Now suppose that Smith & Brown, finding it impossible by themselves to hold the total of the stock in their own possession, decided to sell twenty shares of the par value of $100 each—$2,000 in all—to other persons, say employes of the company, at the rate of one share to each. This will at once raise the question of keeping track of the accounts of the different shareholders and of knowing how the ownership of the shares changes, since laws providing for the government of corporations invariably furnish a means for the sale or transfer of any share or shares from their existing owner to a new or prospective owner. Theoretically, the fact that the concern is organized as a corporation would not necessarily make any difference with the accounting. There might be opened in the ledger a series of subdivisions of capital account each with the name of the owner of the share as a descriptive heading and the amount of the par value of the share held by him as the credit entry in his section of capital account. Practically, this would be out of the question as soon as the number of shareholders became considerable and would be substantially impossible for bookkeeping reasons as soon as the shareholders began to transfer or combine their holdings. For this reason, additional bookkeeping and accounting methods are resorted to as soon as a concern is organized in a corporate form. If the concern does not require that its stock shall be paid up by the persons who subscribe to it (that is put in the capital) at the outset, they being allowed to pay it in on the installment plan, what is called an installment book must be kept. This is nothing more than an outline record of the names of the original subscribers and the amounts they have paid on the

different dates set for the payment of the installments. In addition to this there is opened what is called a stock ledger. The stock ledger simply includes a series of accounts with individuals who have subscribed for the stock. When they have fully subscribed, their accounts are of course complete. They then show on the creditor side the amount paid in, and on the debtor side the number of shares assigned to or subscribed for by the particular shareholder. When each has fully paid up his subscription, his account can be closed. The capital account in the ledger simply represents on its creditor side, as before, the sum total of the cash contributed by the various stockholders during the period of organization. Some accountants think it desirable also to open an additional account in the ledger entitled "Stockholders Account." Such an account is debited with the total of the shares issued because the stockholders are indebted to the company for that amount. Then when they have paid in their cash this is credited to the stockholders account, and the account is closed, being thereafter of no further service. Meanwhile, a special record of cash has usually been carried during the period of organization, in which are entered on the debit side the amounts of cash received by the concern from stockholders, while on the credit side are entered the amount paid out for expenses and any amounts that may be refunded to stockholders who want to get out of the enterprise and are allowed to do so under the terms of organization. But at the close of the organization process, the general ledger finds itself with a capital stock account in which is entered as a credit item the sum total of the contributions by all of the stockholders and with a cash account in which is entered as a debit item "To stockholders" or "To cash capital" the actual amount of cash which has been received. If some of this cash has been disbursed in the meanwhile for organization expenses, it will necessitate the opening of a special expense account in which

will be entered as a debit entry the organization expenses of various kinds. It is obvious that the sum total of the debit entries in cash and in expense account will equal the total cash capital contributed by the stockholders and credited to the capital stock account as a lump sum. It is clear that the stockholders will want some actual tangible evidence of their ownership in the concern. This is afforded by establishing a "certificate of stock book" which consists of a series of printed or engraved certificates attached to stubs similar to the stubs of a check book. The certificate is filled in with the name of the stockholder and the number of shares which the certificate represents and when his stock is paid up the certificate is torn off and given to him. On the stub is an entry of his name, the date at which issued, the serial number of the certificate and the number of shares which it represents. Suppose that such a certificate is issued to John Smith for 30 shares in the new concern. Smith may decide to dispose of 10 shares. In that case he will return the certificate and ask to have two new ones made out, one for 20 and the other for 10 shares. The old certificate is pasted back to the stub from which it was originally torn and a reference is made to the two new certificates issued in place thereof, giving their numbers. Then John Smith can dispose of his 10 shares, assigning the certificate by signing his name on the back in a form provided for that purpose. The new owner, say J. P. Morgan, returns the certificate to the concern and it is pasted back on the stub from which it came, while a new one in favor of J. P. Morgan is issued in lieu thereof. Other books may be found to be desirable for keeping track of the various changes and operations connected with the issue, retirement, and exchange of shares.

Stock Retained.

It does not necessarily follow that the Smith & Brown Company will decide to issue all of its shares at once. Smith

& Brown after looking the ground over may come to the conclusion that $10,000 is a larger capitalization than they need to start with and that they can get along with a smaller amount which they are able personally to contribute without bringing in outsiders by selling shares to them. In that case, Smith & Brown may resolve each to take out 40 shares, each paying $4,000 in full settlement thereof and not to issue the remaining 20 shares. If this 20 shares thus retained by the concern is held by the concern in general ownership for a possible future issue, it is called "treasury stock." It can, at some later date, be issued, should such a course be determined on as advantageous. For example, if two years after starting, Smith & Brown find that their business is growing and needs more capital, they may determine after all to sell out the $2,000 worth of stock to outsiders. The situation is then the same as it would have been had this stock been issued at the beginning. What has happened has been that additional capital is put into the business. The old capital account is closed and a new start is made with the enlarged capital which has now been contributed or "put in." There are other ways in which this treasury stock may be issued, but they will not be considered at this point.

Payment for Stock.

As stated at the opening of this section several assumptions were made at the outset in speaking of the question of capital. One of them—the question of ownership—has now been disposed of. A second must next be dealt with. It has been taken for granted thus far that capital is paid up in cash to start with. Such is by no means always the case. In most businesses where the original capital is contributed in the form of money, the money itself is of no service except in so far as a small sum may be kept on hand for current expenses. The money is taken by the managers of the concern and is invested in

something. In retail trade it is probably largely invested in stocks of goods. In manufacturing it will be largely invested in the factory building, the machinery, etc., necessary to carry on the operations, but in every case the object of the managers will be to invest it in a form in which it can be used for earning a business profit by buying and selling something. The question may be asked: Why should not the persons who organized the business contribute the things with which business is to be done directly, instead of converting them into money and then having the money expended for buying the same sort of things? Or to put the point in another way, if the organizers of the concern have the materials for business already available, why should they not be allowed to put them into the business at the start in payment for their stock? There is no reason why this should not be done, and as a matter of fact it is done in probably the large majority of instances. The only serious question that arises in connection with such a matter is that of valuation. It is plain that the persons who are organizing a concern are likely to be given special favor in the purchase of their property which would not be given to outsiders. There may be no particular harm in this if all of those who go in are treated exactly alike—that is to say, have the same degree of favor or over-valuation allowed them. Of course, if some stockholders are required to contribute money while others are allowed to pay in property, the latter being valued very highly, the operation is merely a shrewd scheme whereby the owners of the property sell it for more than it is worth while the persons who contribute the money pay for the property at too high a valuation. This, however, is a question of business prudence and policy and not primarily of accounting. How does such payment in property affect capital account? Let us suppose that Smith & Brown in organizing the Smith & Brown Company determine to do so upon a basis on which Smith contributes a store supposed

to be worth $4,000 while Brown who has been doing business in a rented building puts in a stock of goods supposed to be worth $4,000. Here we have the Smith & Brown Company organized with its $8,000 of capital stock outstanding, $4,000 in the hands of Smith and $4,000 in the hands of Brown. The capital account shows a creditor entry of $8,000. No cash, however, has been contributed so that it is not necessary to open the cash account unless by a fiction the two men are supposed to contribute cash to the amount of their stock which is promptly paid out to them in exchange for their property at the agreed-upon rate. It is, however, necessary to open accounts showing the form which the capital has taken. One of these will obviously be "goods" in which there will be a debit entry of $4,000 while the other will be "real estate" in which there will be a debit entry of $4,000, the two totaling the same as the nominal contributions of Smith & Brown to the capital. Suppose, however, that Smith & Brown recognized that the items of property they had put in were not worth, as an actual matter of selling value, the sums at which they were set down in our supposition, although they believed that they might be justified in so representing them because of the fact that they had an established trade that would enable them to pay interest or dividends on a total of $8,000. What change would this make in the accounting? If Smith & Brown were determined, as we have assumed, to keep this stock outstanding, it would be necessary, if they were to have a true valuation of assets at less than the face of the stock, that there should be opened at the start some other account which would account for or represent the difference between the nominal value of the shares issued and the actual value of the assets put in. For example, if we assume that the building contributed by Smith is really worth $3,000, while the stock contributed by Brown is also worth only $3,000, while the shares issued are still $8,000, then we have a situation in

which capital stock account shows a credit entry of $8,000, while real estate shows a debit entry of $3,000 and goods account a debit entry of $3,000. Another debit entry of $2,000 must be provided somewhere not merely from the standpoint of practical bookkeeping in order that the books in which these accounts are recorded may "balance," but also in order that the student of these accounts may know exactly what was the nature of the value or assets on the strength of which the capital stock was issued. It is necessary, then, to raise another account to carry this $2,000. Almost any appropriate heading may be employed for this account. One frequently employed is that of "good will." By opening a "good will account" with a debit entry of $2,000 it is made to appear that, of the capital stock issued by Smith & Brown, incorporated, $3,000 is real estate, $3,000 actual value of goods, while $2,000 is represented merely by experience, prestige, or business acquaintance—in other words, "good will." Some concerns, where the process of putting the shares on the market has been long and expensive, carry an account called "organization expenses." In this may be put as debit entries any discounts that may have been allowed to stockholders in order to induce them to come in as well as commissions paid to persons who have assisted in putting the stock on the market. On the other hand, the stock may be issued at a premium. Suppose for example that Smith & Brown considered the assets they had contributed as worth more than the par value of the stock outstanding, they would still have a capital account which would show the par value of the stock outstanding. The real estate and goods account would show debit entries of (say) $4,500 respectively. It would be necessary then to open some account to show what disposition has been made of the excess of real assets over capital. This might be done by opening an account entitled "reserve" or "surplus" with a credit entry of $1,000. This credit entry would be composed of

(in our illustration) two items "By real estate......$500" and "By goods ....$500," because $500 was the excess of the value of the real estate contributed by Smith over and above the stock issued to him, while $500 is also the excess of the value of the goods contributed by Brown issued by him. If the stock had been issued for cash the credit entry in reserve account would be "By cash......$1,000."

Payment for Bonds.

Although the capitalization of a concern is usually spoken of as if it applied only to the stock issued, and although a great many people are in the habit of thinking of bonds as if they represented a loan made by a company for the purpose of making up deficits or losses or for the purpose of paying in part for property purchased which the concern was unable to liquidate in cash, such is by no means usually the case. On the contrary, bonds are frequently issued at the outset of the business as a means of representing a part of the capitalization of the concern. In that event there is no reason why the accounting for the bonds should not be carried on as a phase of the capital account. A "bond account" is opened and is conducted in precisely the same way as capital account. The total bonds issued have yielded a certain amount of cash. The first entry in bond account then is on the credit side just as in the case of capital and is "By cash....$." If the bonds are issued at a discount or at a premium, the method of dealing with them is the same as that which was followed in dealing with capital stock under similar conditions.

V. CASH ACCOUNT.

Theory of Cash.

In our early simple illustrations, it was assumed that actual cash was received and paid for every item bought and every item sold. Thus, when an individual went into

business he was supposed to put in cash as representing his capital. This gave rise at once to a debit entry in cash account corresponding to the credit entry in capital account and signifying that the stock of cash held by the concern was simply the amount of cash that had been put in as capital. That is to say, the concern at starting had a certain amount of cash which constituted its assets and owed an equal amount to the proprietor for the capital which he had invested. Later we saw that the capital is not necessarily represented by cash at all, although for the sake of convenience it may be assumed that the property is put in in the form of cash and that this cash is as promptly disbursed at a specified rate to the members of the concern in return for various tangible assets which it has been agreed they shall put in at a determined valuation. However this may be arranged, every concern starts with some cash, since that is necessary to pay running expenses, so that as a matter of fact the first entry in cash account in the ledger is invariably on the debtor side where it indicates that a portion of the capital has taken the form of, or has been contributed in, actual cash. This is strictly true, however, only in those cases where the concern has the cash physically on hand in its safe or cash drawer. It should be understood, however, that the amount of cash which is carried in this way in modern businesses is not large. Theoretically, a concern might insist on being paid in cash for everything it sold or did, and might stand ready to pay cash for everything it bought or had done for it. It might go so far as to demand the actual transfer of money in each case. But ordinarily it does not do this.

Modern Means of Payment.

In lieu of cash payments, it is much more customary to pay or be paid in a check or draft on a bank or in commercial paper. The use of these means of payment in lieu of cash makes it necessary to establish other methods of ac-

counting corresponding thereto. These other accounts, however, have a very close and intimate relationship to cash, inasmuch as ultimate convertibility into cash is the test of the goodness of every check, draft, or piece of commercial paper that passes between business men. It is necessary, therefore, to consider the methods of accounting applicable to these other means of payment not only in their relation to the business itself but also in their relation to cash account for the reason just stated. The other methods of payment may now be considered.

The Bank and the Check.

In modern business every man who carries on transactions of any considerable size, and even those whose transactions are small but who want to have an accurate record of everything they pay, deal through banks. The relation of the bank to the business man has several aspects, but at this point we will consider merely its aspect as a keeper of actual money. For example, Smith & Brown when they started business may be assumed to have put in their capital in the form of actual gold coin to the extent of $8,000. Not wishing to keep this amount in the safe, they decide to deposit it in a bank which they have selected for the purpose. The entry in the cash account as has been seen is on the debtor side and is (Smith & Brown being organized as a corporation) "To capital......$8,000." When this cash is placed in the bank (the First National having been selected) the cash account will stand as follows:

CASH.

Dr.					Cr.
Jan. 1	To capital	$8,000	Jan. 1	By 1st Nat'l Bank	$8,000

This simply shows that $8,000 was paid in in cash as a result of the contributions of capital and was promptly paid out again in the form of a deposit in the First National Bank. Of course a bank account with the First National

should likewise be opened and that would stand as follows:

FIRST NATIONAL BANK.

Dr.					Cr.
Jan. 1	To cash deposit	$8,000			

Suppose that Smith and Brown, instead of paying in their contributions of capital in the form of coin, have simply turned them in in the form of checks. After endorsing these checks in the firm's name, the bookkeeper or cashier of the concern might take them direct to the bank and deposit them, in which case the account of the First National Bank would stand exactly as above. There would then be no absolute necessity for passing the items through cash account. Theoretically, since they are equivalent to cash and could be changed into cash at the banks on which they are drawn, they might be treated simply as gold coin and entered on the debtor side of cash account just as in the illustration already given, then re-entered on the creditor side when deposited, a corresponding debtor entry being made in the First National Bank account as soon as the deposit had been effected. This would merely mean that there had been a compensating entry on each side of cash account which was thereby relieved of further responsibility for the $8,000, such responsibility being transferred to the bank. A method which might be followed by some concerns would be to omit bank account entirely and treat all checks received as actual cash items. In such a case it would be left to the bank to keep track of the deposits made with it, whether in the form of cash or checks, and to record them in the pass book of the concern. That is to say, the concern would simply conduct its cash account on the original basis, regarding checks received and checks given by it as cash, and simply treating its deposit in the bank as a fund placed there for safekeeping. Proper accounting, however, calls for a segregation of cash and bank items. What has been said about sums that are received in the

form of checks and are redeposited in banks applies in like measure to sums that have been paid out in the form of checks drawn by the concern on its own bank. As just seen, it would be possible to regard all such payments as payments of cash to be offset by drawing money out of the bank and debiting it to the cash account. In practice, the preferable way would be to pass through the cash account only those items that were actually received in the form of cash and redeposited, or were drawn out of the bank in the form of cash to meet payments over the counter and were then disbursed in that way, while receipts of checks directly deposited in the bank should be entered direct as debtor items in bank account and payments made by check should be entered as creditor items in bank account. The firm's pass book at the bank then serves as a means of testing the correctness of the debtor side of bank account since it shows the total of deposits which the firm has made there, as recorded by the employe of the bank, while the firm's own check book serves as a test of the correctness of the creditor side of bank account since the stubs of the checks, if correctly written up as the checks are drawn, show the amount which the bank has been called upon to pay in behalf of the firm to its creditors. The bank account is treated exactly the same as the cash account and payments of cash into bank are credited to cash and debited to bank, while withdrawals of actual cash from bank are treated as credits to bank account and debits to cash. If J. P. Morgan gives the concern of Smith & Brown a check on his bank in liquidation of dry goods which he has bought from Smith & Brown, this then means a creditor entry on J. P. Morgan's account "Jan. 1 By check ......$100," and appears in bank account (if it is the only deposit for the day) as "Jan. 1 To J. P. Morgan check ......$100." If John W. Gates and others have given similar checks to the concern, the items may be lumped together on the debtor

side of bank account as "Jan. 1 Deposit......$500," although an enumeration of the names would be preferable.

Use of Commercial Paper.

In many cases persons who buy from others are not in position to pay cash or (what is the same thing) give checks on banks payable upon demand. They want time in which to liquidate their obligations. For instance, suppose that James Jones buys a bill of $500 worth of goods from Smith & Brown expecting to retail it in his small shop. He may not have the $500 in hand and may want thirty days' credit in order to have time to sell the goods and realize on them, at least in part. He may, therefore, arrange with Smith & Brown at the outset that he will not be required to pay in cash but that the goods shall simply be carried on his "open" account. In other words he makes payment only in "credit"—that is, he does not make any immediate payment at all. How shall this transaction be accounted for? In the first place it evidently gives rise to a credit entry in goods account. Supposing that goods is already debited with $4,000 (the amount originally contributed by Richard Brown as the stock of goods with which to start business), what has happened has been that $500 worth of goods has been drawn from goods account. Goods account or the stock of goods on hand has parted with that amount and must therefore be credited to that extent. This would make the goods account appear somewhat as follows:

GOODS.

Dr.					Cr.
Jan. 1	To capital	$8,000	Jan. 1	By James Jones	$500

James Jones must now be represented in an account on the books which will appear as follows:

JAMES JONES.

Dr.					Cr.
Jan. 1	To goods	$500			

At the end of the thirty days for which credit was extended to Jones, the latter may appear and pay his "bill" by handing in money or a check, in which case the account is closed as described above (See page 37). But it is more likely that at the outset Smith & Brown will have refused to let Jones have the goods unless he has given them some piece of commercial paper as evidence of his indebtedness. Such a piece of commercial paper might be found in a "note" reading as follows:

$500 New York City, January 1.

Thirty days after date for value received I promise to pay to the order of Smith & Brown Five hundred dollars with interest at 6 per cent.

James Jones.

Suppose that Smith & Brown had received such a "note," how would they account for the fact that it had been paid in? In the first place it would have to be regarded by them as completely liquidating the account of James Jones. James Jones' account then would appear as follows:

JAMES JONES.

Dr.					Cr.
Jan. 1	To goods	$500	Jan. 1	By note	$500

If the firm was in the habit of receiving a good many such notes the entry on the credit side would probably be assigned a number and in that case the entry might be "By bill receivable No. 1......$500." The receipt of this paper, however, would make it necessary to account for that fact elsewhere. How would this be done? The bill receivable is not cash nor is it as yet a claim on a bank. It is necessary then to open an account entitled "Bills Receivable." That account will stand as follows:

BILLS RECEIVABLE.

Dr.					Cr.
Jan. 1	To bill receivable No. 1	$500			

Any other form of commercial paper might have been given and accepted by the concern in the same way. For

example, the concern might have been authorized by James Jones to "draw" on him at thirty days for the goods. Smith and Brown might have made out a "bill of exchange" which might have been "accepted" in the technical sense by James Jones. In this case the entry would probably have been made in the account of James Jones and of bills receivable in the same way—the "paper" received would have been put down simply as "bill receivable No. 1." Then in a "bills receivable" book all of the particulars about the given bill would have been recorded and if information about it was wanted recourse could be had to the bills receivable book where it would be found under the appropriate number. Of course when such a bill receivable was taken by the concern the fact would have been recorded in the day book and would doubtless have been journalized as explained in the section on Books (Page 28). The accounting thus far has not been changed at all in principle or method but is exactly identical with that which would have been adopted had payment been made in cash or a check, the bills receivable account being opened in order to account for, or keep track of, bills receivable that have come in, just as cash takes account of cash and bank account takes account of checks received.

Process of Discount.

But now a further modification is necessary. Suppose that Smith & Brown when they received the "note" given them by James Jones, needed the cash immediately, what could they do? In such a case they have access to their bank, one of whose principal functions is that of "discounting paper" or in popular language "lending money." Smith & Brown take to the First National Bank the note for $500 payable thirty days after date at 6 per cent and ask the bank to let them have the funds. The bank thinks the paper good, that is, it believes that James Jones will be likely to liquidate at the maturity of the note. It may

ask Smith & Brown to "endorse" the note (which they do by writing their firm name on the back of the paper). The bank then takes over the note as one of its assets. That is, in this case it practically buys the note from Smith & Brown subject to Smith & Brown's guarantee that it will be paid at maturity. What effect does this have upon the accounting? Obviously the first effect is that of passing the note out of the hands of Smith and Brown and into that of the bank. This means a credit entry in bills receivable account which will then stand as follows:

BILLS RECEIVABLE.

Dr.					Cr.
Jan. 1	To bill rec. No. 1	$500	Jan. 1	By bills rec. No. 1 discounted	$500

This means that the bill receivable has been disposed of and of course the corresponding record is made in the bills receivable book and the other books. If the bank at which the note was disposed of has paid cash, an entry is made on the debtor side of cash account for $500 thus: "To bill rec. No. 1 discounted....$500." What is more likely is that the bank will not pay cash but will credit the account of Smith & Brown with the amount. This means that the bank account kept by Smith & Brown is debited, that is, a debtor entry of $500 is made there thus: "To bill receivable No. 1 discounted......$500." Still another modification must be introduced. The note which was given by James Jones to Smith & Brown in our illustration bore interest at 6 per cent and we have assumed that this rate was so satisfactory to the bank that it simply took the note over. But James Jones, as we have seen, might have paid in the form of a bill of exchange. This would have amounted to making the bill simply collectible at maturity without any interest. Smith & Brown were willing to do this for the sake of selling the goods. The bank, however, is not willing to let Smith & Brown have the face of the note without any interest and so it exacts an interest or

"discount." If the rate is 6 per cent, this will amount to one-half of one per cent for the thirty days, which on $500 will be $2.50. In other words, the bank will give Smith & Brown only $497.50 either in cash or in the form of a "deposit." How should the "discount" thus exacted by the bank be accounted for on the books of Smith & Brown? They have parted with the bills receivable so that that account is not affected at all in this case any more than in the case where Smith & Brown got the full face of the note. The transaction analyzed is simply this—Smith & Brown have paid $2.50 for immediate cash. The transaction can be accounted for, then, by making a debtor entry in cash account or bank account, as the case may be, for the $497.50 and then adding a debtor entry of $2.50 in profit and loss account; or, instead of the latter entry, by opening a "discount account" and making a debtor entry in that thus: "Jan. 1, To discount on bill rec. No. 1......$2.50." This discount account represents expense on the debtor side and will consequently be ultimately transferred to profit and loss since it is a section of that account as already explained (see p. 21 above). Another way of accounting for the transaction would be to make the debtor entry in bank account for the full amount of the face of the note, crediting bank account simultaneously with the discount or crediting cash with the discount instead, then opening the discount account in the same way and debiting it or debiting profit and loss direct as already explained. What would have happened then would have been that Jones paid Smith & Brown in an obligation not due until thirty days from date, while the firm in order to get immediate use of the money would have disposed of the obligation to the bank and would have increased its bank or cash account to a corresponding extent, the transaction, however, involving it in an expense or cost known as "discount," which is reckoned as a money loss to the concern and is so represented. Very much the same object would have been at-

tained if James Jones had paid to Smith & Brown the sum of $497.50 direct and in order to do this had borrowed from the bank. In that case, however, Jones would not, perhaps, have been able to get the accommodation which the bank was very ready to give so long as the note was guaranteed by Smith & Brown.

Bills Dishonored.

A further problem in accounting presents itself in case James Jones as a result of bad business finds himself unable to liquidate his note when it is presented by the bank to which it was sold. If this should happen, the note or draft is said to be "dishonored." The bank might then proceed against Jones and endeavor to collect the amount. In practice, however, it would not take that course, but would return the obligation to Smith & Brown from whom it was originally obtained and who sold it or had it discounted. The bank would be enabled to return it because of the fact that the obligation had been endorsed by Smith & Brown at the time when they first entered into relations with the bank. If they are in a solvent condition, they will have to receive back from the bank the note or draft which was given to them by Jones. This means that they will have to pay the bank what they originally got from it. How does this change the accounting? In the first place, it of course alters the account with the bank, giving rise to a credit entry for the amount which should have been paid by James Jones had he honored the bill. This credit entry in bank account means that the account of the firm with the bank is decreased (that is, its net balance is lessened) by the amount in question. The credit entry in bank account is then offset by a corresponding debtor entry in the account of James Jones who should have paid the obligation. Suppose that Jones (as heretofore assumed) gave the bill on the 1st of January for thirty days

and consequently dishonors it on the 30th of January. Then his account will stand as follows:

JAMES JONES.

Dr.					Cr.
Jan. 1	To goods	$500	Jan. 1	By bill rec. No. 1	$500
Jan. 30	" bill rec. No. 1 dishonored	500			

This shows that, although during the 30 days intervening between the period when the note was given and the date when it is received back the account of James Jones is settled or balanced, on and after the 30th of January he is again in debt to the firm for $500 which now appears as a debtor entry in his account. The question what to do with Jones and his indebtedness is now a legal problem or a problem in business policy and is one with which the accountant has nothing to do pending the time that Jones is prevailed upon to make a settlement. His default may be due to circumstances over which he has no control and in that event he may renew the bill, in which case his account would be credited with his renewal thus offsetting the debit entry already made. Simultaneously a debit entry for the new bill would be made in bills receivable account. The firm might prefer not to have this detailed transaction appear on its books and hence might suspend entering anything until after it had seen Jones and had come to an agreement with him. If the situation was amicably adjusted, it might secure an extension from the bank, thus obviating the credit entry in bank account already referred to and rendering it unnecessary to make any other entries on the books. If the bill had not been discounted but had been dishonored by Jones when directly presented by the firm on the 30th of January, the entries would have been a credit to bills receivable and a debit to Jones' account. This would simply have meant that Jones, having failed to pay, was liable to the firm for the amount of his dishonored bill while bills receivable account would have surrendered this bill, it no longer being a live piece of paper,

and would therefore be credited for it. If then a new bill were made by Jones, the transaction would be treated as an entirely new one, just as before—that is, Jones' account would be credited for the new bill while bills receivable would be debited. If Jones on settling pays some interest in cash for the original term of the bill, as he probably would be likely to do, his account would be debited with that amount and a corresponding credit would be entered in profit and loss because interest is an earning or gain. If an interest account were kept, separate from profit and loss, but as a section thereof, the interest entry would be made in interest account and subsequently transferred to profit and loss. A fresh discount payable to the bank for the period of renewal would be accounted for as in the case of the original discount.

Bills Payable.

It will have been inferred by the reader, of course, that what has been said about the matter of bills receivable is true in precisely the same way of bills payable. Smith & Brown may do just as Jones did—pay for a consignment of goods with a note or other piece of commercial paper running for 30 days or some other period. That is, they have issued an obligation against themselves. Suppose that Smith & Brown, after organizing with a stock of goods valued at $4,000, concluded that their stock was inadequate at certain points and so bought from William Wilson $500 worth of goods additional, giving Wilson a note for thirty days for the amount. Then goods account would look as follows:

GOODS.

Dr.					Cr.
Jan. 1	To capital	$4,000			
Jan. 1	" Wm. Wilson	500			

At the same time an account would be opened for William Wilson as follows:

WILLIAM WILSON.

Dr.					Cr.
Jan. 1	To bill payable No. 1	$500	Jan. 1	By goods	$500

Here William Wilson's account is balanced and there is an entry of $500 on the debtor side of goods account. This is offset by opening an account with bills payable as follows:

BILLS PAYABLE.

Dr.					Cr.
			Jan. 1	By bill payable No. 1	$500

Here the note given to William Wilson is described as "bill payable No. 1," and an account intended to keep track of or to describe bills payable is opened and entitled "Bills Payable." This account is credited with the bill payable that has been given because the concern has parted with a bill payable, that is, has created a liability to that extent which thus finds its place on the books and in so doing offsets the debit entry made in goods which was augmented by the $500 worth of commodities which was received by the firm on consignment from William Wilson. In case interest is paid at the maturity of the bill payable, that constitutes a loss or expense to the business, and is so entered on the debtor side of profit and loss or of interest as the case may be. In case the firm is not able to meet its bill payable at maturity, it will probably secure a renewal, and may entirely omit any accounting on its books, or it may preferably regard the bill payable as paid at maturity and an entirely new bill issued which of course gives rise to the same entries over again.

Relation between Cash and Quasi-Cash Accounts.

From what has been said, the importance of the relationship between cash, bank, bills receivable, and bills payable accounts, is plain. These four accounts constitute an important group or series having intimate connection with one another inasmuch as bank account loses cash to,

or gains cash from, cash account, while cash account does the same with respect to bank, and bills receivable may be converted into bank credit or cash at any time while bills payable maturing become claims upon and thereby reduce cash or bank account. It is thus clear that a concern which, in making a showing of its assets and liabilities, merely states the amount of cash on hand or the sum to its credit in bank does not give a fair idea of its position. The inquirer wants to know about how heavy a draft is likely to be made upon its cash or its bank credit by reason of the approaching maturity of bills payable, and conversely he needs to know about how much the cash or bank account is likely to be strengthened by the maturing of bills receivable which will presumably result in bringing cash into the possession of the concern. If the concern has discounted its bills receivable as they came in at the bank, endorsing them of course as it is obliged to do, it has thereby created what is called a "contingent liability," which of course does not appear in the accounts, as explained, because it is assumed that every maturing bill will be met. The contingent liability of the concern can then be fairly and truly exhibited to the student of its condition only by a statement of such contingent liabilities or by the adoption of some system of designating on the books of the concern the amounts that were realized through the discounting of bills having the firm's endorsement and which therefore may be regarded as a possible liability that will have to be met in case the persons who gave the bills do not meet them upon presentation.

VI. GOODS ACCOUNTS.

Nature of Goods.

In dealing with the goods or merchandise account of a concern we practically assumed, when speaking of the subject first, that there was no entry except the general entry

representing the total value of goods which had been realized and placed on the shelves or in the storage rooms of the business as the result of the outlay of capital, to await the disposal by sale in the course of trade. This might theoretically be true—that is, goods might be obtained by direct purchase in specified amounts. They would come in as independent consignments and could be entered in the way already indicated. As a matter of fact, goods would not come in in this way in ordinary business nor would the single entry to which we have referred be an adequate amount of information for a concern which was beginning business. For instance, in our illustration of a case where Smith & Brown were supposed to put in actual property instead of cash, Brown supplying a stock of goods worth at estimated value $4,000, the concern would want to know a good deal more about the details of the operation than would be indicated in that way. Probably in such a case a complete inventory of all of the items of goods thus put in by Brown would be made out and filed. With this in hand, the goods account might be opened in the way indicated or with an entry of this kind: "To capital; goods contributed by Richard Brown as per inventory......$4,000." If it were desired to do so, there would be no reason why a short consolidated statement of these goods might not be entered on the debtor side of goods account thus:

GOODS.

Dr.						Cr.
Jan. 1	To capital, goods contributed by Richard Brown dress goods notions, etc., other goods	 $3,000 500 500	$4,000			

The statement might be continued to any desired length, but in practice it would be better to refer to the inventory which gives the complete detailed statement of items and

can be referred to as occasion may demand when information about the quantity of goods obtained from Brown at the start is wanted.

Goods on Invoice.

In our previous illustrations we assumed that when the concern bought goods from William Wilson it simply made a corresponding entry showing the total bought from William Wilson and thus added to goods. Of course it would want to have a much more detailed record than this of the items it received. William Wilson would bill the goods in detail in the form of an invoice which would be received by Smith & Brown either previous to, or simultaneously with, the receipt of the consignment. By preserving this invoice in a book established for the purpose (see p. 33 foregoing), he would have a complete record of the items received from William Wilson. If the concern was in the habit of buying from Wilson regularly, it would want to know what entries in the goods account corresponded to Wilson's shipments and so in making the entry now under consideration it would assign the invoice a number. Then the entry might be as follows: "To William Wilson, Invoice No. 1......$500." By referring to the invoice book at any time when the information was desired, it could then be seen what had been obtained on that occasion from Wilson.

Goods Returned.

But in many instances Smith & Brown would not find that the invoice corresponded exactly to what they wanted and they might therefore wish to return the goods. In the same way persons who bought from them might be dissatisfied and return goods to Smith & Brown. This would give rise to a necessity for some way of recording the fact that goods once sold or bought had been returned. In practical bookkeeping, this question of returns is a

matter involving some little difficulty of technique in order to keep exact account of goods received or sent out. A bare reference may be made to the bookkeeping phase of the matter and then the accounting side of such transactions can be explained. It is likely to be necessary to make such returns both to firms from whom goods have been purchased and to accept them from individuals who have purchased from the firm, quite constantly. The wrong goods may be shipped, or they may arrive in an imperfect condition, or returns may be necessary for other reasons. The invoices, as we have seen, including of course on their face the items that are now to be returned, have been recorded or filed and it may be that the proper ledger entries (as well as the entries in intervening books) have been made up before the necessity of returns is discovered. One way of taking care of such transactions as a matter of original entry is to have a book dealing with "inward returns" and one dealing with "outward returns." In the first is set down each day the goods that come back to the concern from persons to whom they have been sold, while in the latter is set down the merchandise returned by the concern to firms and individuals from whom it has been bought. The inward and outward returns books are thus supplementary to the purchases and sales books and the purchases book, which shows by transactions in chronological order (see p. 30) the goods that have been obtained by the firm, will, when studied in connection with the outward returns book, show the net amount that has been obtained by the concern from outsiders. So also the sales book when studied in connection with the inward returns book will show the net amount that has been disposed of by the concern during the fiscal period under consideration. We may now glance at the accounting side of this question of returns. Going back to our original illustration where William Wilson sold Smith & Brown a bill

of goods worth $500, it will be remembered that the transaction gave rise to a debit entry of $500 in goods account and a credit entry of $500 in William Wilson's account. Now suppose that a day or two after receipt of the consignment, Smith & Brown on unpacking the goods find that one item consisting of 100 yards of dress goods is damaged. The goods are shipped back to Wilson (assuming of course that the responsibility for the damage has been fixed upon Wilson and that it has not occurred en-route, in which case of course it may fall on someone else) and the proper entries are made in the outward returns book. This practically reduces the amount of the goods that were obtained from Wilson. The whole of the goods has been entered in goods account on the debtor side, however, and so this item is entered on the creditor side as offsetting the quantity of goods represented by the total invoice on the debtor side. The account will then stand as follows:

GOODS.

Dr.					Cr.
Jan. 1	To capital	$4,000	Jan. 1	By returns (Inv. No. 1)	$100
Jan. 2	" William Wilson (Inv. No. 1)	500			

This shows that Wilson's Invoice No. 1 has given rise to a credit in goods account of $100 which means that Wilson has had that value of goods shipped back to him. In Wilson's own account there will be a corresponding entry and his account will stand somewhat as follows:

WILLIAM WILSON.

Dr.					Cr.
Jan. 1	To goods returned (Inv. No. 1)	$100	Jan. 1	By goods Inv. No. 1	$500

This process would be reversed if James Jones who bought a bill of goods from Smith & Brown had been dissatisfied with one item in the consignment and had consequently shipped it back to Smith & Brown. It may

be supposed that on receiving the articles, Smith & Brown look over the stuff which has thus been reconsigned to them and find it damaged as alleged by Jones. After recording the fact of the receipt in the inward returns book, and duly journalizing, the operation will result in a credit entry in the account of James Jones while goods account will be debited. This means simply that the stock of goods has been increased by the amount of goods that has been returned while the claim of the firm on Jones has been diminished by the sale value of the goods shipped back. In order to avoid frequent entries in goods account, the amount of returns inward or outward may be debited or credited only as a monthly total, leaving the inward and outward returns books and the personal accounts of Wilson, Jones and others to exhibit the detailed facts.

Consignments.

In what has been said about dealings in goods or merchandise thus far, the assumption has been throughout that the goods were sold for cash, or on credit, or else on the strength of a bill receivable of some kind. It is not always possible or desirable for firms to deal exclusively by means of direct sale on any one of these bases. The firm may find it difficult or impossible to get others to run the risk of taking its goods and paying for them in cash, or to obligate themselves by the creation of commercial paper to pay for the goods at a specified money value at some time in the future. This may be because the goods are perishable and the concern to whom the goods are sent does not want to run the risk of their becoming spoiled while in stock or it may be that the firm which sells the article wishes to have the transaction carried on through an agent in order to insure control of prices or for some other reason. In such cases, the goods are disposed of on consignment and the proper accounting features have to

be added in order to show what has been done. Let us suppose that Smith & Brown, the firm of our illustration, desire to place a special line of goods with Thomas Taylor in a neighboring town in order that Taylor may dispose of them to his customers. Taylor is not willing to take the goods on his own risk because he is doing a small business, but he tells Smith & Brown's agent that he will accept the goods on consignment. A shipment of $100 worth of "notions" is sent him at once. What accounting will be necessary? Taylor has not bought the goods and has incurred no liability whatever for them. He has merely agreed to give them room in his shop and if they are sold to return the money to Smith & Brown, deducting, say, 10 per cent commission for his services. The true facts in the situation may be represented in the following way. A consignment account for Thomas Taylor is opened in the ledger and this is debited with the amount of goods shipped. This gives rise of course to a credit in goods account which may read "By consignment to Thomas Taylor......$100." Suppose Taylor goes on and sells the goods successfully, the price in such cases of course being fixed by Smith & Brown. They have directed him to sell the goods in such a way as to realize, say, $120. Taylor takes in this amount, deducts his 10 per cent commission, $12, and remits a draft for the difference—$108—in favor of Smith & Brown. This will give rise to a debit entry in bank account because the draft is presumably deposited in bank. If a corresponding credit entry is made in Thomas Taylor's consignment account the transaction will have been correctly represented. Supposing that Smith & Brown had to pay express charges amounting to $1 on the consignment, this would be properly represented by a debit entry of $1 in Thomas Taylor's consignment account because that would result in correctly exhibiting what the cost of the goods landed in Taylor's establishment is to Smith & Brown. The outlay for ex-

press charges might simply have been debited to profit and loss or to freights and express account (for ultimate transfer to profit and loss), but it would be better to keep it with the consignment to which it belongs and in that case the entry would be made as already indicated. Thomas Taylor's consignment account might then look as follows:

CONSIGNMENT ACCOUNT.

(Thomas Taylor.)

Dr.					Cr.
Jan. 1	To goods	$100.00	Jan. 30	By draft Thomas Taylor as per statement	$108.00
Jan. 1	" express charges	1.00			

This account would now be closed by entering a debit balance as follows: "To balance to profit and loss...... $8.00." This sum would then be entered as a credit in profit and loss account as follows: "Jan. 30, By Consignment Account (Thomas Taylor)......$8.00." So far the process of accounting where goods are shipped on consignment has presented no difficulty. Taylor has been a trustworthy man and the goods have been safe in his possession. The assumption of the accounting has been merely that a certain stock of goods has been set apart in a safe place to be disposed of by Thomas Taylor and this expectation has been justified. Suppose, however, that Taylor has no success in selling the goods so that the time comes when the books are to be closed and the returns from Taylor amount only to a small sum. In this case the account still stands open and the balance on the debtor side representing the excess of the goods over the amount which Taylor has remitted in cash is really a section of goods account since it shows goods on hand. These goods are an asset and will be so represented in the final statement or balance sheet the concern makes. In closing the consignment account the goods still in the hands of Thomas Taylor would be given a value either based on their original shipping value or else based on a statement made by Taylor

as to the present worth of the goods and this amount would be credited to Thomas Taylor's consignment account before balancing. The reader will remember that this is exactly the same method of treatment that was indicated in connection with the closing of goods account itself. The balance of the account then represents the actual profit made on that portion of the goods which has been sold. If of course the consignment had been shipped just before closing the books so that no time had been afforded for Taylor to sell anything, the account would be closed by simply entering on its credit side a value corresponding to that of the goods shipped and then treating the value of the consignment as the opening entry (debtor side) of Taylor's consignment account for the ensuing period. In this case there would be no entry to transfer to profit and loss inasmuch as no commercial operation would have been performed. The consignment account is thus really a section of goods account and Thomas Taylor has not figured, except for the purpose of identification. Suppose, however, that Taylor, knowing the desire of Smith & Brown to be closely informed of how the sale of the consignment is going, decides simply to send them a statement and to wait before remitting until he can collect from his customers who perhaps have bought the goods on credit. Taylor reports, let us say, that he has sold $50 worth of the goods at the end of the first week. What is the situation? Taylor has sold the goods and has either received the cash for them or else the promise to pay, either oral or written, of his customers. He is therefore liable to Smith and Brown for the amount of his sales. Instead of entering anything to the debit of bank or cash account, therefore, Smith and Brown are now at liberty to, and should, open a personal account with Thomas Taylor making a debit entry to open as follows: "Jan. 8, By goods as per statement..$50." But how about the accounting of Thomas Taylor himself, or to keep the illustration per-

fect, how about the accounting of Smith & Brown if they had received a consignment from Thomas Taylor? When the goods were received no account needs to be opened. Taylor in this illustration has shipped the goods to Smith & Brown on his own risk and the latter have received them but they have not become liable therefor. It will of course be desirable to check over the items along with the invoice and make sure that they are correctly stated. A detailed memorandum entered in a memorandum book which may be called "Warehouse Book," is desirable simply as a record, and this practically serves as an inventory statement of all original consignments sent to and received by the firm. Suppose, however, that Smith & Brown sell at once $50 of the consignment they have received from Thomas Taylor. Suppose that these items were sold for cash over the counter. Then, of course, cash must be debited for the amount of cash taken in, or bank account must be debited if the payment is made in checks. If the customers are known to the firm and so get their goods on credit, the debit entries are made in their accounts for the amounts that they buy. What has happened now is that the firm has received cash or bank credit or claims upon other individuals by selling goods belonging to Thomas Taylor. Smith & Brown then must open a personal account with Taylor because they are now in debt to him for the amount that they have received as above indicated. A credit entry showing a liability on the part of Smith & Brown is therefore made in Taylor's personal account. If the firm has had to pay any shipping expenses or others connected with the consignment, corresponding debit entries are made. Of course Smith & Brown's commission on Taylor's goods is also debited. When the consignment has been disposed of, the difference between the amount realized on the goods (as shown on the credit side of Taylor's account) and the amount charged against the goods for expenses and commissions (as shown on the debit side

of Taylor's account) is ascertained. This is the net sum owing to Taylor. Suppose the amount is $90 and a draft is remitted to Taylor. This draft is a credit in bank account and of course is charged to Taylor's personal account as a debit. The account can now be balanced and the difference between the amount received for the goods on the one hand and the amount remitted to Taylor plus the expenses on the other will be Smith & Brown's commission. This sum can now be credited to profit and loss account because it represents a clear gain or profit.

Trading Accounts

The principles which have just been set forth in connection with consignments may be, and customarily are, carried a good deal further in connection with certain phases of business which may most conveniently be explained at this point. The reader will have noticed that in analyzing consignment accounts we endeavored, for reasons there stated, to apportion the actual direct expense incurred in connection with a consignment to that particular consignment, the reason assigned for so doing being that it was desirable to know exactly what the particular venture in question had cost the concern. The same idea works out in very much greater detail as soon as a business develops into a concern of any degree of complexity or becomes involved in operations of large size involving several factors for their successful completion. It then becomes exceedingly desirable to know, so far as possible, which expenses have been incurred for certain transactions. Evidently, unless this can be known, the concern has no definite idea whether it is doing a profitable business in those lines or not. The sum total of the business may show a small profit and yet there may be a very shrewd suspicion that some of the operations in which the concern is engaged result in actual losses. Whether they do so or not cannot be told because the special expenses

incurred in connection with them are not segregated. It is this idea and the necessity of apportioning expenses and costs that gives rise to the necessity for cost accounting—a necessity which will be considered later on in this treatment. At this point it is enough to say that in keeping account with goods it is oftentimes not desirable to have a distinct separation of expenses from the goods in connection with which expenses are incurred but it is desirable to have expenses so charged as to bring them into close juxtaposition with the operations that have given rise to them. For example, in the case of the small operation just studied in which Smith & Brown and Thomas Taylor were supposed to be participants, suppose that Smith & Brown had been put to rather heavy expense in transmitting the goods and that the expenses of shipping, all told, came to $9, whereas the profit was only $8. Evidently if this consignment was one of, say, one hundred or more and if the outlays for express and freight, insurance, etc., had simply been charged in lump sums chronologically to expense account, insurance account, etc., the firm would have had no way of knowing at the end of the month whether there had been an actual profit in the Taylor business or not. Now exactly the same thing is true on a much larger scale where the concern handles several lines of goods under its own roof. For example, suppose that Smith & Brown decide to make their business a small department store and in one department they handle dry goods, in another, groceries, and in another, house equipment and furnishings of various kinds. It is found that a certain amount of freight, etc., has to be paid and a certain amount of wages for salesmen, etc., has to be laid out while, let us suppose, the business has grown quite rapidly so that it is not possible for the salesmen to shift about from one department to another. Smith & Brown have been keeping their goods account, wages account, freight and express account, etc., as general accounts, during the

first six months of their life, simply entering in each the amounts expended without any reference to whether they were incurred in selling dry goods, groceries, or house-wares. On July 1, they decide to make a change and the books are closed. After taking inventory, it is found that there is left over from the transactions of the preceding six months a stock valued in all at $6,000, which is equally divided between dry goods, groceries, and house-wares. The opening entry in the goods account on the old plan would now evidently be as follows (on the debtor side): "July 1, To stock on hand....$6,000." But it is clear that there would be an advantage in dividing the goods account up into three sections, one corresponding to each of the departments. These might be entitled "Goods (dry-goods department) Account," "Goods (groceries department) Account," and "Goods (house-wares department) Account." In each of these there would be a debit entry of the total amount on hand as shown per inventory (in this case by the terms of our supposition) $2,000. Then in carrying on the accounting for the dry-goods department there would be entered on the debit side not only the value of any additions that might be made to the stock in that particular department but also any expenses that were actually incurred for the purpose of getting it placed on the shelves or of getting it off the shelves and into the hands of the consumers. On the credit side would be entered of course the amount sold and in addition any specific profits or earnings that might have accrued through the efforts of that particular department. Suppose that during the month of July one-half the stock of goods (worth $1,000 inventory value) was sold for $1,200, while during the same period it was necessary to pay wages to the amount of $100, freight, etc., to the amount of $25, and incidental expenses, $10. Then the account for that department would stand as follows:

GOODS.

(Dry-goods Department.)

Dr.					Cr.
July 1	To stock on hand	$2,000	July 31	By sales	$1,200
July 31	" wages	100	July 31	" goods on hand	1,000
July 31	" total freights	25			
July 31	" miscellaneous	10			

Here the section of the goods account which deals with dry goods shows that articles which cost the firm $1,000 have been parted with and in their stead $1,200 in cash has been received, but that in this process of changing goods into cash there has been incurred an expense amounting to $135. At the end of the month, assuming that the goods still left on hand are worth as much as they ever were, there is a net profit in the department of $65, or in other words the department has paid for its own individual expenses and it has $65 left over which it can contribute to the business for the purpose of paying profits on invested capital or general expenses. General expenses are mentioned for the reason that no mention has been made of these among the debit entries in dry-goods department account. In the form which we have used, the general expenses would just as formerly be carried in the general expense accounts—rent, taxes, etc.—and ultimately transferred to profit and loss. It might be possible to assign some of these to the departmental account—for instance, by ascertaining what proportion of the expenses of various kinds, such as insurance, was incurred for groceries, what for dry goods and what for house-wares. Beyond a certain point, however, this apportionment would become rather uncertain, and it would be preferable to carry it in the general expense accounts as one of the inevitable concomitants to the running of the business rather than to try to segregate it.

The question how far such segregation will in practice be expedient and desirable is a question that can be settled only as the conditions of the business require and about

which no definite rule can be laid down. The fact remains that in every business involving either the establishment of departments under one roof or the establishment of branches in different places some application of this idea of segregation of expenses, coupled with their assignment to the particular business operations that have given rise to them, is called for. Where such an arrangement is made upon an accounting basis like that indicated above, the account is called a "trading account" and it is theoretically said to be a "mixed" account, inasmuch as it involves both goods entries and expense entries, which latter theoretically pertain to profit and loss accounting. Reference will be made to this matter at a later point in the discussion (see p. 145).

Closing Inventory.

Reference has already several times been made to the question of an inventory and it has been pointed out that such a statement of items as are taken over by the business and constitute its stock in trade is needed at the outset and should be filed in detail as one of the original records of the concern. It is clear from what has been said thus far that as goods are sold the stock is reduced, while as invoices and bills of goods are purchased it is increased. The accounting system which has been described keeps track of the outflow of goods in exchange for money and of the inflow of new goods in exchange for the firm's money. If it were possible to trace every item through the various accounts to which it is assigned in the process of accounting and if it be assumed that no losses whatever occur in the stock of goods through waste, theft, etc., the difference between the original inventory and the items sold would show the items remaining. It would not show the value of the items remaining because their original value is set down as the cost or basic value to the concern while the values at which the sold items are recorded on

the books are the values which the concern has established as proper rates of remuneration to it and are normally an advance over the original cost of these articles. But it is plain that to ascertain the amount of the stock left on hand in this way would be practically impossible as a matter of actual procedure. The method adopted is to take an inventory of the goods at the close of each fiscal period. This inventory shows the number of items of each class of goods remaining on hand, and they may then be assigned a value at their present probable worth, or they may be given the value which is determined by what they originally cost to the concern. Which one of these modes of assigning the value of the goods will be followed will of course depend upon a variety of considerations among which the character of the goods is an important one. If they have not varied much in value, being of a staple character, there may be no particular reason for trying to revalue them.

VII. PLANT AND PROPERTY ACCOUNTS.

Relation to Preceding Discussion.

In everything that has been said thus far, it has been assumed that the concern of which we were speaking was primarily engaged in the retailing of goods and that in carrying on this business it did not require very much investment in things other than those which constituted the basis of its sales. True, in analyzing the business of Smith & Brown, we assumed that one item of the investment of the concern was a shop or building in which the business was to be conducted. But we fairly implied that this might be regarded as a substantially stable investment which did not change materially in value and which could be looked upon simply as a part of the assets of the concern permanently placed in a form which did not yield any direct income, but which nevertheless enabled the con-

cern to avoid the expense of rent and thereby made it worth while to use the funds of the business in that way. It is now necessary to observe that a business firm is not necessarily in the position which has thus been sketched but that almost every business is obliged to invest a part of its funds in physical assets which are not the basis of its buying and selling process but which afford the means for going on with the enterprise. Thus, for instance, the retail shop of the kind we have been speaking of may own its own building and that building may not change very largely in value, but it is further probable that in addition to the building the concern will have had to invest a substantial sum in furniture, fixtures, and the like, and that these articles will wear out as time goes on. The same thing is true in a much higher degree of a concern that is engaged in manufacturing and puts part of its capital into tools, machinery, and the like. In speaking of the question of inventories at the close of the last section, we noted that a concern may find that its stock of goods unsold has changed in value somewhat during a fiscal period, so that in restating their value for the purpose of closing the books, the concern is obliged to recognize an element of loss, or possibly of gain, due to fluctuations in the price of articles remaining unsold. Where a concern carries on hand a large stock of raw material of a kind that fluctuates in value from day to day it may appear that at the end of a fiscal period the stock on hand is worth very much less or very much more than it was at the beginning and that there is here an element of gain or loss which the concern is not responsible for in so far as relates to its active business transactions, although of course it may have adopted a conscious business policy which looked to the carrying of a large stock of raw material or goods with a definite view to probable appreciation in value. It will, however, be found that in every concern, whatever elements of appreciation or growth in value there may be,

there is always an element of depreciation. This depreciation is the consequence of the wearing out of assets and if the true condition of the business is to be correctly represented, it must be allowed for. The problem thus indicated gives rise to the question of accounting for depreciation (and of course, conversely, for appreciation). This is present in every concern. It is therefore necessary to consider with care the accounting phases of this question.

Plant and Property Accounts Described.

Under ordinary conditions, a concern which is starting in business and which has invested a part of its capital in fixed forms will seek to classify these fixed forms by kinds or groups and to open an account with each kind or group. Thus, recurring to the affairs of Smith & Brown, it will be remembered that we supposed that they put $4,000 into a shop for the conduct of their business or that they included as a part of their capital to start with a shop valued at $4,000. This was represented at the opening of business in an account headed real estate and opened somewhat as follows:

REAL ESTATE.

Dr.					Cr.
Jan. 1	To capital, building contributed by John Smith,	$4,000			

Now let us change the terms of this supposition somewhat by assuming that the value of this building was only $2,000, but that John Smith had contributed in addition show cases and the like set up in place and worth $1,000, while we may further assume that he had supplied delivery wagons and horses valued at $1,000. Under this supposition, it is clear that instead of entering $4,000 as the value of the building contributed by John Smith the entry would be changed to $2,000. It would then be desirable to open

an account with fixtures which would be done somewhat in the following manner:

FIXTURES.

Dr.					Cr.
Jan. 1	To capital, cases, etc., contributed by John Smith	$1,000			

An account would likewise be opened with horses and wagons or preferably one with horses and one with wagons. Supposing that the establishment had three horses and three delivery wagons the horses being assumed to be worth $450 and the wagons $550, accounts might be opened as follows:

HORSES.

Dr.					Cr.
Jan. 1	To capital, 3 horses contributed by John Smith	$450			

WAGONS.

Dr.					Cr.
Jan. 1	To capital, 3 wagons contributed by John Smith	$550			

All of these accounts might have been grouped together perhaps under the head of "Plant and Property Account" with subsections for the different kinds of plant and property, as Real Estate, Fixtures, Horses, Wagons, etc., just as in the case of goods we saw fit to subdivide it into sections corresponding to the various departments whose operations it was desired to analyze. In either case, the result is the same. That is to say, John Smith's portion of capital account carries a credit entry of $4,000, which indicates the accepted valuation of the things which he has put into the business. These various things at their respective values are now scattered through a series of accounts, the debtor entry in each of which is the particular asset which gives its name to the account and which is set down there at a total valuation corresponding to what it is estimated to be worth in proportion to the other items of property. The sum total of these debtor entries in the

property accounts represents the total that has been put in by John Smith and corresponds to the total creditor entry in his section of capital account, or $4,000. Thus far the innovation made upon our original simple supposition is merely that of assuming that, instead of putting in a single class or kind of asset, he puts in a number of different kinds of assets which are classified as already indicated for purposes of analysis or convenience. The situation would have been the same if he had put in $4,000 of cash at the start, and if then this cash had been laid out in buying for the firm the items of plant and property which it actually needed. A similar classification would have been adopted had the concern been engaged in some other line of business, except that the classification would have corresponded with the particular forms of business assets which would then have been secured. Thus if Smith & Brown had been conducting a bank and John Smith had put in $4,000 cash, this amount might have been spent in part for the purchase of a banking establishment, in part for furniture and fixtures and in part for safes or vaults. Accounts would then have been opened with Banking House, Fixtures, and Safe and Vaults. Or if Smith & Brown had been engaged in the printing business, the accounts might have been Real Estate, Presses, Typesetting Machines, etc., the classification being developed as far as was deemed desirable and each of these accounts carrying as its opening debtor entry the amount actually spent in getting that particular kind or class of machinery or fixed plant installed.

Depreciation.

Suppose the concern of Smith & Brown, engaged in the dry-goods business, continues its operations for a year and then wants to know where it stands. Looking over the property it finds that the building has been somewhat damaged, there being an estimated loss of $200 in value.

It finds that the fixtures as the result of a year's hard wear have deteriorated to the extent of $100, while one of the delivery wagons in an accident has been injured, thereby resulting in a loss of, say, $150. How can the concern represent these facts in such a way as to make a correct showing at the end of the year? Evidently if it merely assumes that the building, fixtures and wagons are worth the same as they were, it will have overlooked a total loss or expense, incurred during the year, amounting to $450. If it made no effort to record this, but simply assumed that the fixed assets were worth as much at the end as they were at the beginning of the year, it would be misrepresenting its profits by $450, because if the concern were to be liquidated the money value of its fixed assets would be $450 less than when they were originally taken over by the firm. This would mean that, if the concern first replaced the capital at the same amount at which it was originally stated, it would have $450 less cash than the books now show. Some regular and recognized way of representing this depreciation must therefore be determined on and put into effect.

"Writing Down" the Assets.

The most obvious way of recording depreciation of the kind already described would be that of ascertaining the value of the assets at the end of the year, and then making the corresponding entries in the accounts. If, for example, it was found that the building owned by the concern had lost $200 in value as just assumed, the real estate account (described on p. 85) would have a credit entry somewhat as follows: "December 31, By damage through wear and tear......$200." The corresponding debit entry would appear in profit and loss as "December 31, To damage to building......$200." This would merely mean that in footing up profit and loss account an extra sum of $200 was recorded on the debit or expense side

and that in that way the showing of profit was reduced $200 below what it would otherwise have been. This would mean that if the showing of profit otherwise made was, say, $500 it would now be only $300. In other words, if the concern had expected to have $500 of free cash to distribute in dividends, it would now find that it was disappointed in this expectation, since it would have only $300. But the extra $200 would remain in the possession of the concern in the form of cash. What would have happened then would have been that the concern had itself consciously put aside or retained in the business $200 representing the value of destroyed or wasted assets which have been reduced in value, by deducting that amount from the gross profits of the year. If the same plan were applied to the fixtures account, horses account and wagons account, the result would be to retain in the hands of the business an amount of extra cash which, if expended, would restore the fixed assets to their original value. So far the accounting would have been adequate, because it would have indicated the reduction in the value of the assets, the deduction from profits and the increase of cash to correspond. It is clear, however, that if this process were continued, the capital assets would be gradually reduced and it would give rise to corresponding additions to cash in hand. This would mean that one of three uses would have to be made of the cash thus accumulated: (1) It might be directly reinvested in restoring the capital assets to their original condition. In that event an entry would be made in the proper accounts, as fixtures, etc., on the debit side. This entry would represent, say, in the case of the building, the fact that $200 (the amount of the wear and tear) had been put back into the concern, thus restoring the building to the same original value with which it started; or (2) the cash might be set aside as a distinct cash fund saved for the purpose of ultimate replacement of assets; or (3) it might be deemed wise to use this cash in extend-

ing the business by putting it into the purchase of a larger stock of goods or other floating assets. It is well to note that in every business there will regularly be a certain demand for ordinary repairs, renewals, replacements and the like. These outlays are a part of ordinary running expenses and should be dealt with in precisely the same way as other ordinary running expenses. Such outlays do not mean that depreciation in the proper sense has been provided for. Depreciation is the larger conception of general loss of value rather than that of special and minor injury due to use.

"Writing Down" not always Satisfactory.

While, as we have seen, the process of writing down assets is truthful and (if correctly done) gives a sound and accurate idea of the exact status of the business at the end of the fiscal period, it is not always satisfactory. One objection to "writing down" the assets is that the original cost and the full extent of provision for depreciation during the life of the assets is not readily ascertained from the accounts. Moreover, the process does not tell what has been done with the cash representing the reduction in assets, although a study of the accounts will reveal where such cash has gone. Moreover, the direct expenditure of funds thus set apart out of profits for the purpose of restoring the same assets to exactly their original condition is not always possible. Thus the deterioration of the building which we supposed to be represented by $200 at the end of the first year may be due simply to the wearing off of paint, etc., the indications being that in the course of another year a complete renovation would cost $400, which is at the rate of $200 per annum, even though it may not be deemed wise to make any direct expenditure on the building at the time. In

the same way, the horses owned by the concern are growing older year by year and are losing value to that extent, but they will continue serviceable for a number of years and the amount of their deterioration per annum is not sufficient to buy a new horse. The difficulty of apportioning depreciation and of putting back exactly the same quality and value of assets as have been destroyed by use, becomes greater and greater as the business becomes more and more complex. While, therefore, the process of writing down the assets to correspond with their true value is useful and necessary, it alone does not supply an adequate and complete accounting for the change that has taken place in the nature of the firm's assets. What can be done to complete this accounting? In the analysis already made, it was assumed that an entry is made on the credit side of the fixed plant and property accounts, this entry giving rise to a corresponding debit entry in profit and loss, indicating a loss of that amount. Instead of proceeding in this manner the accounting may be carried on as follows: After making the proper credit entry in the fixed plant and property accounts just as before, a "depreciation account" may be raised and, instead of carrying the corresponding debit entry to profit and loss, it may be entered in this depreciation account. The entry may be made as a lump sum representing the estimated total depreciation which has been spread out over the real estate, horses and wagons and other accounts, in which case the account would stand somewhat as follows:

DEPRECIATION.

Dr.					Cr.
Dec. 31	Wastage of assets for past year	$450			

All this amounts to is that instead of entering the total loss of assets as a loss in profit and loss account it is now entered as depreciation. In order to close depreciation account, if nothing further is done the balance will have

to be transferred ultimately to the debit side of profit and loss and thus the same result will be arrived at as before. Depreciation account is here a section or subdivision of profit and loss. Suppose, however, that the concern, not thinking it desirable to retain the cash idle, or to divide it among the stockholders, or to reinvest it either on the fixed assets or in increasing the floating assets, determines to invest it as a special fund to be drawn upon in the future. Suppose it is decided to buy bonds with the amount. An entry is made in cash account to show that cash has been parted with in order to pay for these bonds. This will be a credit entry in cash somewhat as follows: "Dec. 31, By cash for investment bonds......$450." The concern, however, in the course of this transaction has acquired bonds, hence a bond account called perhaps "Depreciation Fund" must be opened to represent the accession of assets with a debit entry as follows: "Dec. 31, To U. S. bonds.. $450," it being assumed that the United States bonds are the class of securities in which investment has been made. What has now been done has been to show the existence of a depreciation of specified amount, to indicate the fact that cash has been disbursed for the purpose of offsetting such depreciation and finally to show that, in this process of disbursing cash, sundry assets have been acquired which have taken a special form—that of bonds. It will be noted that according to this method the depreciation is not a necessary charge against income of a definite period, but a charge against such surplus as the concern may accumulate. This may be an important consideration in connection with some phases of cost accounting, as will later appear.

Depreciation Reserve.

It may, however, be impossible to spread depreciation accurately and minutely over the whole of the plant in all of its details, and the concern may not want to attempt a process which will necessarily be inaccurate in some de-

gree. If that be the case it may be considered wise simply to set aside a certain sum for the purpose of providing a fund out of which to meet depreciation when such depreciation is recognized in the future or when it has gone to such a point that it can be accurately measured. In this case the concern may simply determine to lay aside a more or less arbitrary sum out of profits with which to meet possible future depreciation. We may assume that at the end of the year an expert man goes through the plant and comes to the conclusion that the probable annual depreciation will be about $450, although he feels uncertain as to precisely how much should be assigned, say, to plant or fixtures. Some of the considerations affecting his judgment will be sketched later. At this point it may be assumed that his judgment is taken as sufficiently accurate. The concern determines therefore to set aside $450 out of the gross indicated profits. This will be done by making a debit entry in profit and loss after gross profit has been ascertained while a corresponding credit is entered in a new ledger account called "Reserve Fund" or "Surplus." This sum may be disposed of in any way that the concern decides to be desirable. If it now follows the same policy as before and invests in bonds, it of course draws on cash to that extent, thus crediting cash. A bond account will be opened and will be debited for the amount spent for the bonds. The reserve and bond accounts are now open and the credit entry in the one is the same as the debit entry in the other. The reserve is practically a part of capital account, it being a sum retained in the business while the bond account with its debit entry merely means that capital assets have been invested to that extent in bonds. If at some time in the future it is ascertained what depreciation has occurred, the assets are written down to that extent and a corresponding debit entry is made in reserve, reducing it by a similar amount. The concern has the bonds among its assets and they will

appear as such. If, however, it is desired to restore the assets to their original condition by drawing on the reserve, the bonds will be sold in whole or in part and bond account will be credited correspondingly. The cash thus realized will of course be debited to cash and when spent in repairing or replacing the assets cash wi" be credited and a corresponding debit entry in the assets account will be made. Meanwhile, if the fixed assets have not been revalued, or, what is the same thing, if depreciation has not occurred, they appear at their original value and the amount carried to reserve fund is simply a net addition to the funds invested in the business. If, however, it has been determined simply to use the cash on hand and retained in the business as a reserve or as offsetting depreciation, in the same way that any other cash would be used, the concern will reduce its valuation of the fixed assets and will use a corresponding amount of cash in buying more floating assets. Here there is a gradual transfer of fixed assets into floating, the reduction in the value of the fixed assets being represented by the process of writing off, while the regular accounts with the floating assets are increased to correspond to outlays of cash made for the purchase of further items of property for use in doing business. The concern knows that it is putting back into the business as much as it is losing from the business in the shape of wasted assets, and it is satisfied with the fact that the business has in all of its branches the same amount of value that it originally had, even though this value is now differently distributed.*

Choice of Methods.

A choice between these different methods of accounting for depreciation cannot be arbitrarily indicated but

* What has been said of the treatment of depreciation may be summarized by quoting from Mr. Cole (Accounts, page 89) with reference to the way in which depreciation may appear on the balance sheet (Cf. our own section on balance sheets, pp. 161, ff., of the present volume). Mr. Cole remarks: "Depreciation fund . . . may appear on the balance sheet in one of three combinations: (1) among assets only—in which case specific property is set aside to

must depend somewhat on the kind of business in which the problem presents itself and the policy which it is desired to follow in connection with the business. Theoretically, the simplest way of dealing with the matter is that of setting aside a given sum as an allowance for depreciation, the nominal assets being reduced by a corresponding amount and all payments for new assets being made out of this fund. Practically, the ordinary business will usually not follow this plan but will adopt the system of annually putting into various forms of machinery or plant, about the amount that it is considered the assets have run down each year. This gives rise to continued debit entries either in the various plant and machinery accounts or in a betterments and improvements account, and to corresponding credit entries in cash account which pays for them. If the old assets are reduced in value by revaluation, such revaluation being exhibited through credit entries representing the wastage, these credit entries will be paralleled by debit entries in the corresponding machinery or assets accounts. If the wastage is less than the reinvestment, the surplus will show on balance sheet as an increase or, if more, as a reduction of assets. The cost of the betterments goes to profit and loss as an expense. The important matter from an accounting standpoint is that the value of the capital in the business shall be maintained and so represented. Changes in the value of particular assets representing the capital are of secondary importance.

It will be necessary to deal further with this matter of depreciation when we come to speak of the question of balance sheets. From what has been said it is clear that the goods account involves a set of entirely new and

replace or repair machinery, or buildings, or whatnot, that are thought to have suffered actual depreciation; (2) among both assets and liabilities—in which case specific property is set aside from net income as a safety fund for possible depreciation not thought to be actual; (3) among liabilities only—in which case the amount is deducted from net income and shown on the books as a safety fund for replacement purposes, but the actual property is left among the general assets without specific designation. In the first case, the fund could not be distributed to stockholders without impairing capital; in the other two cases, the policy might be changed and the fund distributed."

important problems as soon as the "goods" bought by the concern are of a fixed character which may depreciate or increase in value.

Causes of Deterioration.

It is worth while in this connection to consider just what causes give rise to loss of value and may therefore be studied by the business concern which desires to make up its mind regarding the probability of depreciation as a factor in its doings and to reach a decision as to the degree of necessity for a distinct and specific provision against loss. Neglect of them has sometimes thrown a business into an embarrassed position because of failure to provide for a contingency which was considered remote and for which therefore no distinct provision was made. The main causes of deterioration are as follows: (1) The consumption of items of capital during a period of production. An example of this sort is seen in the case of tools which are worn out in manufacturing processes. (2) The reduction of the value of privileges and rights. An example of this sort is seen in the case of a patent which runs for a definite period and whose value is therefore reduced each year as the length of its life grows shorter. A lease paid for in a lump sum at the beginning is another illustration of the same kind. (3) "Wear and tear." This is simply the natural reduction in efficiency or durability which objects of material character undergo as a result of use. (4) General exhaustion of efficiency as seen in the decreasing usefulness of an object in connection with the service for which it was intended notwithstanding it shows no perceptible wearing out. Certain electrical apparatus illustrates this obsolescence. (5) Improvements tending to reduce the value of given capital or machinery. This is seen in cases where a given sum has been invested in a material object, say type for printing which is then rendered obsolete by the appearance of some mechanical device that supersedes it, as, for instance, the

typesetting machine, which dispenses with the use of movable types and substitutes type directly cast in a mold in the machine. (6) Reduction in labor or material costs where contract has already been made for a given amount of labor or material at a price which holds the concern to the use of a more expensive method of production. It should be noted, however, that business losses directly and unmistakably due to mistaken policy or bad judgment cannot properly be charged as "depreciation." Depreciation relates to assets as such, whether they be tangible or intangible. Provision against business losses as such is properly called "contingent reserve" and is part of surplus.

But in whatever way deterioration may occur, it constitutes a final source of business loss and in most cases cannot be definitely counted on in advance. The object of allowing for depreciation is thus not merely one of accounting, but is also one of business policy. The business firm which does not make any allowance for depreciation is putting itself in a hazardous position from which it may have great difficulty in emerging, owing to the sudden occurrence of depreciation which makes it necessary for it to change the machinery already installed or to incur other expense without having made any allowance in advance for resources with which to carry out an expensive undertaking of this description. In such a case the concern is obliged either to borrow funds, thereby creating an additional capital liability, or else to recognize a reduction in the nominal value of its capital, thereby recapitalizing on a lower basis, or else to get the funds out of money that would otherwise have gone for dividends, thereby suspending its dividends or reducing them.

Estimating Depreciation.

In the illustrative cases already given, it has been assumed that depreciation could be more or less accurately estimated. Thus we suppose that Smith & Brown had no trouble in engaging an expert to go through their es-

tablishment and inform them tolerably accurately how much shrinkage there had been in the value of the assets. It was supposed that the amount stated by the expert was accepted without question and the accounting was based on it. Neither of these things is strictly true in practice. It is difficult to estimate the exact amount of depreciation and there are serious mathematical and accounting problems connected with the actual recording of it. In estimating depreciation several factors have to be considered. These are as follows: (1) The original cost or estimated value of the asset; (2) the estimated life of this asset; (3) the amount expended on its maintenance; (4) the residual value of the asset after a given period of time; (5) the choice of a method of computing depreciation either as a fixed percentage of the total original value of the asset or as a percentage of its regular reduced annual value.

Some explanation of these factors may be desirable. It is easy to see why the basic factor in computing depreciation is the original or estimated value of the asset. This original or estimated value shows how much has actually gone into the asset from the firm's funds or capital. The length of its estimated life gives the presumed term over which the depreciation will continue. For instance, if Smith & Brown found it necessary to rent an adjoining building and took the building on a ten years' lease, paying the owner a lump sum of, say, $1,000 down, it is clear that this right or title to the use of the building would be one of their assets and a lease account would at once be raised and debited with the amount. Now if $100 was written off each year from the value of this lease in ten years the worth of the asset would have been reduced to zero and each year this lease account would have shown a balance of $100 less on the debit side while profit and loss would have been debited with an equal amount, the annual reduction in the value of the lease appearing each and every year as a loss or expense to the business. It is also plain that this would be a rather rough way of

getting at the facts in the case inasmuch as the concern would have had $1,000 tied up in the lease for the first year, $900 for the second year, $800 for the third year, and so on, so that the cost of carrying the building lease would really have been $100, plus interest on the $1,000, the first year, less than that the second year, and still less the third year. It would have been possible to give an accurate statement of the actual depreciation of the value of the lease only by ascertaining the exact sacrifice due to the loss of one year of the life of the lease (which would have been constant throughout) and the sacrifice during the first year due to the tying up of $1,000. Then in the second year the loss due to the expiry of a year would have been the same while the sacrifice of capital involved would have been smaller. All this would have involved a somewhat elaborate computation for the purpose of ascertaining the exact amount of sacrifice due to the passage of time.

Another phase of this problem of estimating depreciation was indicated in the third consideration enumerated above, where the amount expended on the maintenance of the asset has to be considered. For instance, suppose that a concern is estimating the depreciation on an automobile. The extent of this depreciation will depend considerably upon the amount expended in maintenance. If the owner is inexperienced and takes care of the machine himself, depreciation may be very rapid, while if the care of the machine is entrusted to an experienced engineer who is authorized to replace parts calling for a change as soon as they show unmistakable signs of unfitness, the depreciation may be very slow indeed. A rough way of getting at depreciation would be to ascertain the original cost of the asset, fix upon a definite length of life during which it will probably continue to be used, ascertain from experience the annual cost of maintaining it in proper condition, multiply this by the number of years of use, add to the original cost of the machine, regard the total as

the actual sacrifice involved in using the machine for the given number of years, compute the actual annual outlay necessary to amount at the end of a number of years to this aggregate sacrifice, and have that amount set aside as a depreciation fund for that particular asset or class of assets. Of course this assumes that the asset is worthless at the end of the period. This would be true of such intangible assets as patent rights, franchise rights, leases, etc., which expire in the course of time but it would not be true of any material object because such objects would almost invariably have what is called a "residual value." Thus in the case of the automobile the machine when entirely worn out and worthless for further use as an automobile would have some value as scrap steel, old rubber, etc., while parts of it might have a substantial value for their original purpose. In such cases a more accurate estimate of depreciation would be arrived at by deducting the estimated residual value of the asset from the total estimated sacrifice involved in getting the asset and maintaining it throughout its natural life. It is observable, however, that in all such cases an element of estimate which grows larger and larger enters into the computation.

When the effort is made to allow for such elements of depreciation as those which grow out of changes in prices of stock or material on hand, or out of the fact that new machinery may suddenly be rendered obsolete by reason of subsequent inventions which make it possible to produce more cheaply, the process of estimating depreciation is purely speculative, and depends entirely upon the ideas, judgment, or perhaps fancy, of the person who is making the estimate. The imprudent man will take his chance that no such unexpected elements of depreciation due to unforeseen contingencies will develop, while the more cautious business man will set aside a fund designed to meet just such incidents. The use of some depreciation policy is, however, becoming more and more common and is quite as much to be insisted on as is the use of insurance

policies. In fact there is the same reason for the one as there is for the other. In allowing for depreciation, the danger to be guarded against is that of overdoing the matter and making allowances for something which in the nature of the case cannot be allowed for or which is offset by an element of appreciation that counteracts the loss due to the wearing out of assets. It is possible by a too cautious depreciation policy unnecessarily and unreasonably to reduce legitimate dividends and thereby to deprive the stockholders of returns on their investments which they ought to have and which if made would keep the credit of the concern with its stockholders so good that it would have no trouble in raising additional capital should that be wanted in the future.

Example of Insurance Policy.

An example of the conservative application of a policy of safeguarding capital against possible loss is seen in the case of our national banking law which has been constructed with the idea of protecting creditors and incidentally stockholders of the banks organized under its terms, thereby giving stability to the institutions. The national banking law requires that a bank before declaring any dividends shall set aside a surplus equal to 20 per cent of its capital. After it has accumulated this amount, it is at liberty to begin declaring dividends. That is to say, a bank with $100,000 capital earns during its first year (let us suppose) $10,000. Its books, in other words, show a profit of $10,000. This is at once credited to a surplus account and the sum is then used in the business—that is, is invested in stocks, bonds, commercial paper, etc. This process is continued until $20,000 is shown by the surplus account. After that time the bank can declare dividends as much as it pleases so that it does not infringe on its capital or surplus. Here we have a case where the possibility of depreciation is recognized and a fund called "surplus" is set aside to meet it. If bank losses occur during the first year equal to $4,000,

there is only $6,000 left to be credited to surplus. Most banks carry another open account called "undivided profits" which is credited with such additional values as are retained in the business over and above the value of the capital and surplus. The capital, surplus and undivided profits accounts all normally show credit balances, and the surplus and undivided profits are theoretically in exactly the same position as the capital account—they represent funds that have been put into the business and for which it is liable to the stockholders.

Appreciation.

Some reference has been made to appreciation in connection with the discussion of depreciation. The subject, however, is not one that needs much comment because appreciation is not a danger to be guarded against but is merely an increase in the value of assets which may well be recognized. Suppose that Smith & Brown's building increased in value from $2,000 to $3,000, owing to a natural rise in the worth of real estate. Smith & Brown would simply be in a position to realize $1,000 more if their business went into liquidation. If they had a regular revaluation of assets it would appear, however, that the assets were now worth more than the capital. No cash would have been taken in but the valuation at which the assets stood on the books would have been advanced $1,000. That is, in real estate account there would appear a debit entry "Dec. 31, To increased value of building on revaluation......$1,000." This new debit item should give rise to a new account which might be entitled "Reserve" or "Surplus" and in which there would be a credit entry somewhat as follows: "Dec. 31, By real estate . . $1,000." Here what is tantamount to a new section of capital account would have been created, the credit balance in it representing an addition to capital assets in the form of real estate and showing that the concern was liable to its stockholders to an equal amount, just as in the case of

capital account. It should be noted, however, that the dangers of overestimating inherent in such a method make many regard it as a very questionable accounting policy. Conservative accountants usually hold that appreciation is best ascertained by actual sale and that otherwise, only a "paper" profit will result which is not available as dividends. Of course, artificially "writing up" a surplus reserve with such a "paper" profit does not show real conditions. Appreciation can, however, often be recognized correctly, as in the case of quoted securities.

VIII. MANUFACTURING ACCOUNTS.

Special Problem of Manufacturing.

Thus far we have taken it for granted that the business operations of a concern are of a single more or less uniform kind. In the case of the retail firm whose transactions were set forth hypothetically, it was stated that they were the buying and selling of goods. Later we recognized the necessity in many businesses of investing capital not only in goods but in fixed forms such as plant, machinery, tools, etc. Nothing, however, has been said of those cases where a concern is engaged in two or more distinctly different kinds of operations. The grouping of goods account as between various departments—dry goods, groceries and house-wares, was not a recognition of this fact, because the business operations there were of the same kind—purchase and sale—although they dealt with different classes of goods. A concern may, however, have more than one distinct kind of activity. It may engage in manufacturing and may then sell the products of its business. It may be a transportation company and at the same time be engaged in producing articles for shipment, such as coal. In fact there may be various combinations of businesses or kinds of business that are being carried on by the same concern or under substantially identical

conditions. In such cases, there is the same reason for segregating the operations and results of one side of the business from those of another that is recognized in the case of the departmental accounting systems of which we have already spoken. The necessity for such segregation is, however, greater in the latter case than in the former because of the fact that the operations are different in their character, involve different materials and methods, and are carried on by individuals of different classes and abilities. Not only for the purpose of showing which parts of a concern's business are making profits and which ones are incurring losses, but also for that of showing how extensive such relative profits and losses are, a segregation of accounts is desirable. It is further desirable because of the fact that a different system of accounts is needed in the one case from what is called for in the other. To get such a distinct segregation, implies, however, an organization of the business for that purpose. Such an organization may be worked out in any one of several different ways. In order to illustrate what is meant at this point we may assume the example of a concern which is engaged in manufacturing and selling shoes. The accounting for the selling end of the business will naturally be organized on an independent basis, just as the selling department is probably so organized. The same will be true of the manufacturing end which is undoubtedly kept separate from the selling end in organization, and should be treated in the same way from the standpoint of accounting. It may be said generally that there should be a separate organization and a separate accounting system for each separate manufacturing department of the business and that these separate accounting systems should fit into one general system which is calculated to combine the results of the whole and to show exactly how each is related to, what it takes from, and what it furnishes to, the general business. How this can be done, particularly with

reference to manufacturing, presents a more complex problem in accounting organization than any thus far discussed.

Organization of Accounts.

Starting with the general accounting system of the concern, we may suppose that business is opened with a cash capital all paid in and that at the outset it is determined to recognize three distinct departments of the business—A, B and C. The accounts pertaining to capital, cash, etc., are opened in the usual way and of course the same would be true of the plant and property accounts if no process of segregation was attempted. Just here is the first change which must be introduced into our outline of organization. In a former illustration (see p. 80 foregoing) we assumed that Smith & Brown in purchasing a stock of goods decided to put these goods into three classes, groceries, dry goods and house-wares, and when cash was expended after crediting the cash account, instead of debiting a general goods account this general entry in goods was broken up into three separate items—one for house-wares, one for groceries, and one for dry goods. which we supposed to be $2,000 each. It will be recalled that we then reopened these three sections of goods account with a debit entry of $2,000 in each. It is clear that if these departments had been sufficiently different from one another—if, for example, one or two of them had dealt with manufacturing and one had been a retailing process—it might have been desirable to make a distinct segregation of this same kind at the outset. Thus, if the three departments A, B, and C spoken of are conceived to be three radically distinct branches of the business, a separate account might be opened with each and might be debited with the sum total set apart for that department out of the capital of the concern which we assumed to be paid up in cash. This is what would be done if the capital

set apart were to be the subject of buying and selling in each department, it being consumed in the course of the manufacturing operation just as goods which are bought at a certain price and are sold or are consumed or dispensed with, so far as the business itself is concerned, in the commercial process. In manufacturing, however, a large amount of fixed capital has to be employed. The concern will undoubtedly determine at the outset about how this fixed capital ought to be distributed or apportioned among the several departments. It will then permit the investment of such capital in the machines, plant and property pertaining to these different departments according to this predetermined proportion. In so doing it will disburse cash which will be simply credited to cash account and debited to the various plant and property accounts in the usual way. These plant and property accounts may be carried in the general ledger just as before (see p. 85 foregoing), in which case, so far as we have gone, the accounting is thoroughly familiar. If the business be broken up into three departments as already supposed, there may be established a separate ledger for each department in which will be opened the various plant and property accounts represented by the fixed capital pertaining to that department. This ledger is then simply a section of the general ledger. The accounts are kept in a separate book but that is merely for the sake of convenience and they might just as well be in the general ledger. If distributed by departments they would however group together the accounts pertaining to departments A, B, and C, so far as the investment of fixed capital was concerned.

Peculiarity of Manufacturing.

It is now possible to note the peculiarity of manufacturing accounts. A plant has been provided and everything made ready for doing certain kinds of work. The accounting will differ from ordinary accounting in that

what is now sought to trace is the process of manufacturing and its effect on the general business. It is also sought, where there is a departmental organization, to trace the relation of each department to the others. Suppose the process of production now begins. It gives rise to outlays for such items as wages, light, fuel, power, etc., and it also results in using up raw materials and in to some extent reducing the value of the fixed capital. What is now to be attempted is to show how these changes in the assets of the concern are represented. Evidently as, say, material is used up, a credit must be given to material account. So also with such items as fuel and the like. These accounts have been debited when the fuel, etc., was bought. They are now credited as the same items are used up or issued for consumption in the business, but how shall the results of such a process be recorded? The next step in the accounting is to establish the corresponding debit entries. This is done by opening accounts corresponding to each of those already existing. Thus, parallel with material account, is opened a "material issued" account. Parallel with fuel account is opened a "fuel issued" account. Parallel with machinery account is opened a "depreciation" account. All these accounts are debited with the same amount that had been credited in the accounts originally opened. They represent the plant, stores, material, etc., that have been used up. In other words they are the expense side of manufacturing. At the same time, as wages are paid, the money will be debited to a wages account and any other expenses that are incurred will be debited to the proper expense account. We now have a set of accounts the debit entries in which, as already stated, represent the expense side of manufacture. We can now open a "manufacturing" account or "production" account. To this will be transferred all of the debit entries represented by the expense items which have been described. The account will be credited with the amount of product turned

out. At what price? Evidently if the operations of the month resulted in 1,000 pairs of shoes and if we were to ascertain from the credit side of the stores or materials, wages, fuel, etc., etc., accounts, the total that had been disbursed in every way during the month, we should know substantially what it had cost us to turn out the 1,000 pairs of shoes. This would be true of course only if there had been no waste and nothing remained unaccounted for. But, under these conditions, we might at the end of the month enter the 1,000 pairs of shoes in the production account at the actual outlay value as shown in the way just indicated. Then if the department turned the shoes over to Department B for packing and shipment it would credit the production account with 1,000 pairs of shoes. At what price? It might credit the account with the shoes at exactly the price shown by the debit entries, since no profit is sought to be made. In that case production account would be closed without a balance. What would be the relation between this set of accounts and the general fiscal accounting conducted in the general ledger? The debit side of the manufacturing account was the total which was distributed through the various investment and expense accounts in the departmental ledger as a series of credits showing outlays. The outcome of the concern's operations in Department A, that is, the 1,000 pairs of shoes which now appear on the credit side of production account as having been disposed of by transfer to Department B, represents what the department has given to the general business or to some one of its branches. The credit side of production account, which shows the goods turned over, may be summarized and transferred to the credit side of general profit and loss account in the general ledger or to a special section of profit and loss designed to show the results of operating Department A. On the debit side will be placed a summarized statement of the expenses. For the sake of purely theoretical illustra-

tion, assume that the machinery, tools, etc., employed by Department A were of so simple a type that they were wholly used up during the first month's operations and that the same was true of raw material and every other item. Evidently then the departmental books would show on the debit side of each expense account the amounts laid out for various things, and on the credit side the totals of these things used up, estimated at their cost value. The manufacturing or production account would show on its debit side the total cost value of the product, whatever it was, which would be identical with the totals of the debit or credit entries (indifferently) in all of the expense or outlay accounts taken together. The credit side of production account would show a total of exactly the same amount representing the goods turned over to Department B. If everything had been used up perfectly evenly in the way indicated this total value would be identical with the amount that had been laid out for the various materials of manufacture, machinery, wages, etc. Department A's account in the general ledger would thus show the same on its debit as on its credit side while the account of Department B in the general ledger would be debited with the goods it had received from Department A at their cost value.

Technical Profit or Loss.

But of course no operation in actual business would work out evenly in this way. It is therefore necessary to alter our assumptions somewhat in order to correspond more closely with the actual facts of trade. The first important modification to be made is seen in the fact that it is not possible to close up a manufacturing operation evenly at the end of a fiscal period. Not only would the machinery be still on hand but there would be balances of raw materials, perhaps by-products, etc., to be disposed of. In other words, it would not be possible on the ac-

counting basis already indicated to ascertain the precise cost of the goods turned out. That is to say, the production account could not be debited or credited with the amount of goods produced at their values. True the production account could be debited with all actual outlays during the month as fast as these were credited to the various accounts which provided for them and then the total outlay could be taken as the value of the goods produced which would appear on the credit side when the goods were transferred to some other department. Probably, however, the concern would prefer to assign a nominal value ascertained by experience to the product. Suppose that the actual cost value had been found by experience to run about $1 a pair for shoes. The credit entry in the production account would then be $1,000, this being a purely nominal figure determined on for the purpose of making the entry. On the debit side of production account would still appear the actual outlays made during the month and on the credit side the assumed arbitrary value of the shoes at $1 per pair. It is obvious that this production account could be closed only by crediting the remaining values of materials issued, fuel issued, etc. The account would show on its debit side the amount actually used up during the period for materials and actually laid out for expenses of various kinds, and on the credit side the amount of materials on hand, the amount of payments made for future expenses, as, for example, where machinery was rented for a term of months and paid for in advance, etc. All these debit items would be debited to production account because they would be received by, or put into, the process of production while the credit entries would show the goods turned over to other departments or retained on hand in a finished or incomplete or unmanufactured condition, the finished goods being listed at the arbitrary value which has been assigned to the completed goods per unit, while the materials are listed at

the cost value. Under these circumstances, the production account would show an excess on the credit side if the value of the goods produced exceeded cost, while it would show an excess on the debit side in case the reverse were true. The process of manufacturing carried on in Department A would thus show a technical profit or loss when the entries were transferred to the profit and loss account of Department A in the general ledger. The technical profit or loss thus made is thereby transferred to general profit and loss. How about the accounting of Department B which deals with the packing and shipping? We saw that when the thousand pairs of shoes are turned out they are transferred at a value of say $1 per pair to Department B. This of course means that the account of Department B in the general ledger must be debited with 1,000 pairs of shoes. A system of accounting may now be established for Department B by itself. In a ledger set apart for the purpose will be created first of all a stock account which is debited with the value of the goods turned over by Department A or $1,000. Other accounts will be raised as money is paid out. Thus, for example, money may be disbursed for wages and gives rise to a wages account which is debited with the total spent for that purpose. There may be charges for rent which will be debited to rent account; for material, debited to material account, and for various other things. Of course the sum totals of these outlays must appear on the debit side of the departmental production account conducted for Department B, in the departmental ledger. As materials are issued, material account is credited with the amount of material issued for various purposes and so on. The production account will show the total amount spent on all of the various expenses of production and on its credit side will show the value of the goods as completed and turned over to Department C. We started with the assumption that Department B took over shoes valued at $1,000 from Department A.

During the process of preparing for the market, packing, etc., it may be supposed that 25 cents in cost has been added to each pair of shoes. This means then that the department has advanced the shoes in value by that amount and that when it is ready to turn them over to Department C for selling it will turn over shoes worth $1,250, the added $250 being the increment of value that came to the shoes while they were passing through Department B. As in the case of Department A the debit entries in the production account are identical with the credit entries which are made from time to time in the various expense and plant accounts. If the manufacturing process worked out evenly, wearing out all the machinery, using up all the raw material, etc., in the course of the fiscal period, the total credit entries in all of these accounts would equal the total debits made in them to start with, thus balancing, while the total debit entries in production account would simply represent the sum that would have to be entered on the credit side of production account when the goods were transferred to Department C for sale. The same remarks that hold good of the accounting for Department A hold good also of the accounting for Department B. If, as in our latest assumption, the entered value of the goods on the credit side of the production account is taken as an arbitrary value or "trade value," then the department may show a technical profit or loss. That is, before the excess value of the completed goods recorded at this trade value is transferred to the credit side of the profit and loss account of Department B in the general ledger, the debit side of Department B is fully written up and closed by including therein all elements of outlay, while the credit side is likewise fully written up by including finished product, material, etc., still on hand but not transferred, so that it may show a technical profit owing to the use of an arbitrary or trade value for the use of the goods as turned out. In that case of course the technical profit is

transferred to general profit and loss account. The same is done if a loss is shown.

Selling the Goods.

We are now ready for the selling of the goods. Department C takes them over and they of course constitute a debit in its departmental stock account in the departmental ledger. In Department C's ledger the stock account is opened as soon as the department begins to take over goods from other departments. Credit entries will be made in this account as the goods in stock are drawn off for sale to the public. Of course other accounts will be entered in this ledger. There will necessarily be a wages account and a rent account, for the use of the premises used as sales rooms, which is debited with the outlay for rent. Expenditures for advertising will be debited to an advertising account which will be written up from some record showing the space used in various advertising media. An account corresponding to the production account but which may be called sales account will be raised. The entries on the debit side of this sales account will be all of the credit entries that have been made in the various outlay accounts as rent, wages, advertising, etc., etc. On the credit side will appear the actual cash values of the goods as they are parted with. We may now turn to the general ledger once more. On the debit side of Department C's accounts have been entered the actual total cash outlays as they have been made in behalf of Department C. These outlays have of course given rise to corresponding credits in general cash account as the money was parted with. The credit side of Department C's departmental account can be written up from day to day, week to week, or month to month as is desired. The credit entries are the goods which have been supplied by Department C to the general public, that is to say, which have been parted with by it. The account is completed and balanced in exactly the same way as those of

Departments A and B. Here however is an additional problem. The goods parted with by Department C are not turned over to another department as was done by Departments A and B but are sold to the outside public which pays for them in cash or gets them on credit. As fast therefore as credit entries are made in Department C's departmental sales account in its departmental ledger, corresponding entries are made on the debit side of general cash or bank account because cash has been received or checks deposited as they have come in from the general public in payment for the goods. If the public has not paid in cash or checks but has obtained the goods on credit, personal accounts are opened. These belong to the general ledger and not to the accounting system of Department C. Department C deals only with the operation of selling. The general accounting system takes charge of what is obtained from this operation of selling whether it be cash, bank credits or claims against individuals. It is clear that the departmental sales account of Department C will, if the business has been successfully carried on, show a balance on the credit side which is transferred to profit and loss as a profit. It has been preceded there by the profits shown by Departments A and B which were described as "technical." They were "technical" simply because they were made at the expense of the business itself. That is to say if Departments A and B had turned their output over to C at exact cost as measured by outlay the whole profit would have been made by Department C and would have been equal to the difference between the final cost of the goods and the amount finally realized for them. The profit made by Department C is smaller, in proportion as technical profits have been made by A and B, but inasmuch as these elements of profit are all united on the credit side of profit and loss in the general ledger the result so far as the general business is concerned is the same. The results of the ac-

counting as shown in the manufacturing and trading accounts and through them in profit and loss are illustrated below.

Manufacturing Account.

DEPARTMENT A.

June 30	To cost of material Stock Jan. 1. Purchases to June 1		June 30	By stock on hand	
	To wages " rent, taxes, etc. " depreciation " sundries			By value of product at cost of manufacture	

Manufacturing Account (Packing).

DEPARTMENT B.

June 30	To goods at cost of manufacture, Dept. A		June 30	By value of product at cost of manufacture	
	To wages " rent, taxes, etc. " depreciation " sundries				

Trading Account.

DEPARTMENT C.

June 30	To goods at cost of manufacture, Dept. B " salaries " commissions " discounts		June 30	By sales	
	To profit and loss % Gross profit				

PROFIT AND LOSS.

(General Ledger.)

June 30	To rent " salaries " office expenses " allowance for bad debts " interest " dividend " reserve fund " balance		June 30	By gross profit, manf'g account A* " gross profit, manf'g account B* " gross profit trading account C " discounts, etc.	

Contents of General Ledger.

What is left under these conditions for the general ledger? We had the capital and cash accounts to start with, bank account and the like. There will also be the departmental profit and loss accounts which gather the results of A, B and C. The relation of the several production accounts or manufacturing accounts or sales or trading accounts found in the several departments and carried by each in its special ledger (or if the bookkeeping is all done in one ledger, then in the general ledger), is thus obvious. These accounts are ultimately of the same kind that were studied in connection with the trading account of retail business. They are accounts showing gross results of business operations, that is to say, they supply the information for the preparation of profit and loss account. They have grouped on their respective debit sides the current special expenses incurred in manufacturing and on their respective credit sides the income from manufacturing, packing, selling, or whatnot, or they may merely show the balances drawn from the several departmental ledgers. They thus furnish when summarized the materials for a final profit and loss account or at least for preliminary work toward such a profit and loss account. As a result of the working out of these trading accounts it would be possible to carry to profit and loss, statements

* In this case no entry because these were carried at cost of manufacture.

showing the expenses of manufacture incurred in Department A and the value of product turned out in Department A, while the same is done for Department B and in the case of Department C in our illustration the expenses show on the debit side while the income from sales shows on the credit side, such income having of course been debited, as received, to general cash account. In the general ledger, also, will be found the personal accounts of those individuals who have had dealings with the firm by taking its finished product. If instead of paying cash for machinery, supplies, etc., for the several departments these items were obtained on credit, there would be personal accounts with the individuals who supplied them. Beside these there will be accounts with all those expenses which are not capable of analysis and distribution to the several departments. An example of such expenses might be found in the case of the salary of the president of the concern. If it were deemed possible to apportion this salary in equal amounts to the different departments, it might when paid be entered as a debit in due proportion to the departmental accounts. This would of course give rise to a corresponding entry either in the wages account of the department (debit) or a debit entry in some account specially raised for the purpose, as, for example, "managerial expenses." It is much more likely that the concern will prefer to retain this and other outlays that are not easily apportioned, such as interest on bonds, etc., in accounts in the general ledger which represent non-apportionable outlays and which therefore go to make up the debit side of general profit and loss. That is to say, they act as deductions from the gross profits reported by the three departments of the concern and when they have been offset against these gross profits the result is the net profit of the business which presumably is available for dividends. What has been gained by this scheme of analyzing the accounts as has been done? Merely the arrange-

ment of outlays by departments or processes so as to show the position of the business at various stages in its development. The system of accounting thus indicated furnishes a cross section, so to speak, of the business at any point that is desired. It shows how much is being spent per month in a given department, how much product is being turned out in that department, whether the department is doing its work within the limit of unit cost set by the known general trade averages, etc. It makes it possible, to a certain extent, to apportion the expenses and profits of doing business and avoids the confusion which would result if, for instance, a general fuel account were kept for the fuel outlays of Departments A, B and C, notwithstanding that the fuel outlay of A was for running machinery, while that of B and C was probably merely for the sake of warmth. It has the advantage of grouping expenses of like kinds or those incurred for like purposes and dissociating those incurred for unlike purposes.

Aids to the Accounting.

We have spoken thus far as if it were comparatively simple and easy to keep track of the outlays and as if they could be directly recorded item by item in the appropriate accounts in each department—A, B and C. Such is not the case. It is probable that the outlays will be more or less complex and it is entirely possible that they may be made from time to time in comparatively small sums. This may be particularly true of wages. Subordinate books therefore must be installed in each department. What will these be? Theoretically, we might employ a day book and journal just as in the case of the general accounting system but practically this will be undesirable. In the case of Department A, for example, it will be undesirable for the reason that Department A does not make any sales but simply transfers its product at a nominal value to Department B. Its operations are not fiscal but

are analytical. It is probable that in most cases the desirable form of subsidiary bookkeeping will be a kind of combination of day book and journal. As this will have to do with outlay or purchases chiefly, it is called by some the "Purchases Analysis Book."* This is a book ruled for the purpose of recording on successive days in tabular form the date of an outlay, the name of the person to whom the sum was paid, the department or branch of a department in the interest of which it was incurred, and the nature of the goods received in return, etc. This is possible because the outlays are all to be of certain specified kinds and have been analyzed in a preliminary way under those groupings. The purchases analysis book simply records the outlays made for goods as they are made. Then, by taking the different columns in which the amounts have been written down, it is seen what entries must be made either individually or as totals for the day, week or month in the proper account. With reference to wages it would be possible to keep track of the wage payments by merely adding a column in the purchases analysis book. Inasmuch, however, as it is desired to keep track in such cases of a great number of individual names, it is probable that pay-rolls will be employed by most concerns unless the number of employes is very small. Such pay-rolls will be merely long sheets properly ruled and written up each week with the name of the individual to be paid and the amount of the payment. On receiving his pay the individual may sign the pay-roll or otherwise vouch for the receipt of his cash. The totals of the pay-rolls may then be carried direct to the debit of wages account. In the purchase of raw materials or supplies it may be expedient to carry a special purchases analysis book if the supplies are of very detailed character. In

* A sample page of such a book with purchases classified for a woollen factory is presented herewith. This example follows the grouping made by Grierson, Advanced Bookkeeping, p. 108, from which the illustration is taken.

that case such a book is merely a section of the general purchases analysis book. In our foregoing discussion, we saw that the credit entries in stores account as well as in all accounts involving materials will be entries showing the amount of materials issued from the stock on hand for the purpose of performing the productive process. In order to keep track of these exactly, some system of vouchers and orders will have to be devised (see pp. 127, ff.), and when these vouchers or orders are honored, it will be desirable to make a preliminary record of them somewhere in order to provide exact data for writing up the credit side of the raw material, or stores issued, account in the ledger. This may be done by providing a "stores issued" book properly ruled with columns for the date, name and kind of stores issued. This involves a ruling which will provide a separate column for each of the principal kinds of stores or materials and usually a miscellaneous column for any additional unenumerated material. It is then possible to have as many different material accounts in the ledger as are desired or to enter the amounts simply as a total from time to time at their cost value.

Analysis of Business.

In what has been said up to this point reference has been made from time to time to various hypothetical accounts that are supposed to be used by a manufacturing department. The effort in the foregoing discussion has been to keep the analysis as simple as possible in order not to confuse the mind of the reader with references to a great number of different accounts the reason for whose creation might not be fully understood. It is now necessary, however, to speak in a general way of the actual process of analysis by which these accounts are determined. We have already said that it is extremely desirable to have each manufacturing department treated as if it were a separate business. This is true because of the desira-

bility of knowing the status of that branch of the business from time to time and thereby of comparing it with other branches or with the status which experience in other businesses had shown to be desirable. But no such analysis can be had in a satisfactory way, nor can the accounting of the manufacturing department be successfully carried out unless in the first place the business has been carefully organized with a view to such a conduct of the concern as will permit of economical and effective operation. One phase of such economical and effective operation is seen in the economical and effective conduct of the accounting system. Such organization must be of a kind to make careful separation (a) of the different classes or kinds of expense involved in the various processes; (b) of the different classes or kinds of material that are purchased; (c) of the different classes and kinds of labor outlay; (d) of the different classes and kinds of product turned out in the department. The latter point requires a word of explanation. It has already been said that the business should be organized and the accounting carried on in such a way as to keep the products separate and permit no confusion to arise. A manufacturing department may, however, necessarily give rise to certain by-products whose creation is inseparable from the manufacture of the principal article which is turned out. This may necessitate a rather complex accounting problem because it will be difficult or impossible to apportion expenses, stores, wages, etc., accurately between the different kinds of product. It should, however, be sought invariably to carry the process of apportionment as far as possible and to avoid grouping together either products or outlays any more than is absolutely unavoidable. How far the analysis of manufacturing processes will go in any particular instance depends in part upon the needs of the business, the question of its volume, the elaborateness of its transactions and other factors. Experience with the given kind of business indi-

cates the general ideas which must govern in such analysis. Thus in textile industries certain general lines that are to be followed, certain general processes that are to be distinguished from one another, certain general results that must be kept in mind, are indicated. The same is true in the iron manufacture and in various other general and broad branches of production. But it remains true that, in every business where manufacturing is carried on, the general outline of the accounting will have to be determined by means of a study of the business processes and conditions which obtain in that particular plant. The accounting will have to be modified from time to time because of the general changes in the volume or complexity of the business or because of changes in its administrative organization. For this reason it is not possible to lay down in regard to manufacturing accounting definite or positive rules of the kind that can be laid down with a greater degree of assurance in the case of the ordinary retail or trading business. In the latter, the practice of accounting is much simpler and may remain very much the same no matter what the magnitude of the operations of the business may be and independent of the number of branches of trade that it takes up. This is not true of the business which takes up another distinct branch of commercial operation as where a selling concern goes into manufacturing or vice versa. Still less is it true when the manufacturing passes beyond a comparatively elementary stage.

IX. COST ACCOUNTING.

Reason for Cost Accounting.

We have seen that in businesses which deal with more than one kind of transaction it is desirable to separate the operations so far as possible, and if practicable to have the accounting of each department of the business conducted on as nearly independent a basis as is feasible. This we

found was desirable in the case of the trading concern because of the desirability of keeping accounts for the different operations or classes of goods separate from one another. In cases where the business sold goods and also manufactured them, it was necessary to keep track of the manufacturing, distinct from the selling, end of the business, because of the fact that one or the other might not be economically handled and might incur loss while the other was making a profit, as well as for other reasons. The idea of apportioning expenses to income or of keeping track of each operation upon a tolerably independent basis may be carried even further than has already been indicated. Such a further working out of the idea of apportionment of expenses to incomes relating to given business operations is seen in what is called "Cost Accounting." Cost accounting, as the name denotes, is a system of accounting which is intended to give a more distinct idea of the actual cost of performing certain operations than could be obtained from the general books of a concern no matter how carefully the latter might be kept. We have seen that a business may be highly organized and may be divided into a number of departments each of whose operations is practically controlled on a separate basis which shows just what is going on in that department. We noted, however, that even where there is this distinct and clear-cut separation there is still no means of knowing the exact cost of units of goods. This is lacking because (1) manufacturing is often a more or less continuous operation which results in turning out uniform lots of goods whose cost, however, varies according to the cost of the materials and labor that go into them, while (2) machinery and fixed capital is not used up in a single operation or set of operations but goes on being used for a longer or shorter period according to the life of the various forms of fixed capital. It is further true that a great many manufacturing concerns are turning out many different kinds of products

or are producing groups of products on contracts. We saw in our former discussion (see p. 109) that these factors complicate the situation to such an extent that it may be considered practically impossible to hit upon an exact cost value representing the items of labor and material entering into a product and thus affording a means of balancing the books exactly. In order to supply this need we saw that the ordinary concern often resorts to the use of an arbitrary figure called a trade value which may represent the cost at which similar items of product could be obtained on the market from other concerns or which may be said to represent the estimated average cost or value which the concern has found by its own experience to be representative of the particular items turned out. It is clear, however, that this trade value must be determined somewhere, either in the other plants spoken of or else in the particular plant itself which is being studied. It is the object of cost accounting to supply the process or mechanism by which this trade value is ascertained and by which the concern or concerns engaged in a given line of business are enabled to judge whether their work is being done as cheaply as the average in that particular industry or not.

Object of Cost Accounting.

The object of cost accounting can now be stated in more technical form. It is statistical as opposed to the object of general accounting which is fiscal. This means that whereas the general accounting system of a concern undertakes to show outlays, incomes, profits and losses, cost accounting undertakes simply to show the apportionment of expenses and preferably the apportionment of such expenses per unit of product turned out. Cost accounting is not concerned with the question whether the firm can or does make sales at a money price which will equal or exceed the outlays necessitated for the produc-

Form No. 7—Cost Sheet*

Ordered: **Commenced** **Order No.——**

Order Dated: **Completed**

Form No. 7.

Labor				Material							Summary	
Date	No.	Productive	Non-Pro.	Date	Regist.	Quant.	Particulars	Rate	Per	Amount	Details	Amount
											Labor	
											Material	
											Expense——%	
											Mfg. Cost	
											Selling Expense	
											Profits——%	
											To sell for	
											Yield	

* Taken from C. M. Day's Accounting Practice, p. 180.

Face p. 125.

tion of a given class of products or unit of products. It leaves that entirely to the managers of the concern assisted by the general accounting system. It does seek to show what items of expense have been incurred, for what objects, and in what proportion. Experience shows whether it was wise to incur such expenses or to divide them in the way that was actually followed. From the cost-accounting system then it is possible to infer or determine what changes must be made in methods.

Simple Cost Accounting.

A very simple type of cost accounting would be supplied if a concern were at the end of a fiscal period simply to make out a "cost sheet." Such a cost sheet would be nothing more than a ruled sheet with headings for the various items of expense. It would be possible then by representing horizontally the outlays on a given undertaking or piece of work and totaling them at the end of the line to see how much had been spent on that piece of work, while by footing up the different columns it could be ascertained how much had been spent in each particular class of outlay upon all pieces of work. A sample cost sheet of this kind is shown herewith. The theory of the sheet is now plain enough. Suppose for the sake of simple illustration that the work is that of a tailor who is ordered to make a suit of clothes for each of ten different persons—A, B, C, D, etc. We may suppose that the tailor's outlays are cloth, wages, linings and sundries, and miscellaneous. Under the latter head we may class, for the sake of simplicity, such items as rent, light, etc., which are general in character and which we will assume are equally apportioned by the tailor among the ten suits of clothes—that is, if the ten suits are each worth the same amount—and if his rent and light bill for the week is, say, $10, this may be taken as roughly $1 per suit. The tailor, wishing to see where he stands at the end of the

week, enters A's suit as "Contract No. 1" on the first line, then enters under the head of cloth the value of the goods put into the suit; under the head of wages the amount paid for journeymen's work, and under the head of linings and sundries the cost incurred on that score. Under the head of miscellaneous he writes down the estimated share of general expenses borne by that particular suit. He does the same for each of the other nine contracts or suits of clothing. If the cost sheet is inclusive and takes in all contracts or business done by the individual during the week and all classes of outlay, it is evident that the cost sheet ought to harmonize with his general ledger. For example, the total entries under the wages column ought to be the same as the outlays exhibited in labor or wages account in the ledger. The total outlays for miscellaneous (rent, light, etc.) ought to be the same as the sum of the entries in the ledger accounts relating to the items grouped under that head. The same is true of other outlay accounts. Of course the tailor will carry in his general ledger personal accounts with the different individuals, A, B, C, etc., who have ordered the suits, but presumably the debit entry in each of these accounts will be for a suit at the agreed-upon selling value mentioned to the customer at the time he made the purchase, while he will be credited with a check or cash for the amount when he pays. If, however, the tailor desired, he might debit the customer with the actual cost value of the suit as worked out on the cost sheet and then add another debit item showing the profit on that particular suit which of course will be equal to the difference between the agreed-upon supply price to the customer and the cost as ascertained from the cost sheet. In this case the cost sheet would have only an auxiliary relation to the general books. It would be merely a statistical memorandum worked out by the proprietor from the general books for his own information. It might turn out upon such an examination

that the cost of some of the suits of clothing furnished was greater than the actual selling price but the general books would not indicate on their face whether this was true or not. The utility of such a cost sheet is therefore obvious and it will be understood that the reason for making it out and carefully comparing it with the returns shown by the general books becomes more and more pressing, the more complex are the kinds of work engaged in.

Individual Cost Sheets.

Suppose the tailor or any other producer on thinking the matter over does not like the idea of waiting until the end of the week or month and then computing a cost sheet to show the results of the several transactions relating to a given contract or piece of work. He may mentally recognize the advisability of keeping this information up to date as he goes along. Suppose then that he provides himself with a set of blanks or blank forms intended to go with each contract that is accepted. If A enters the shop and orders a suit of clothes one of these forms may be filled in at the top with the name "A" in a space provided for that purpose. (For sample see p. 125.) Then as the suit passes on from worker to worker it is accompanied by this blank, which is gradually filled in with labor charges, goods used, sundries put into the suit, etc., etc. After the suit has been completely manufactured the proprietor may, if he chooses, add an entry representing the assignment of general expenses which he thinks ought to belong to every suit of clothes turned out. He will then have on this tag, or voucher, or slip, a complete statement of the history of the piece of work. Suppose at the end of the week he has fifty such vouchers or slips. It is merely a routine matter to tabulate these returns on a general cost sheet of the kind already indicated. Meanwhile, presumably, the tailor has kept up his

general books. Under wages he has recorded all payments for wages; under material he has debited all material paid for, and credited all material issued, etc. On the slips or blanks it is probable that his labor charges will have been entered as number of hours of labor of a given kind spent on each suit of clothes but by making a careful estimate of the actual cost of labor per hour it is an easy matter to harmonize the cost sheet with the showing made in the general ledger account. If the slips are carefully made out and if the assignment of general expenses is correctly made, the tailor will have a fairly good idea of the question whether or not he is making a profit on a given class of work. He will be able to estimate whether he makes a larger profit on his higher cost suits or whether his profit is larger on the cheaper suits. He will thus be able to form an opinion whether to put the stress on the one or the other branch of his business. For his purposes this may be a sufficiently satisfactory system of cost accounting although the cost records will not have entered in any way into the general books unless the tailor has chosen to record the actual cost of each suit as shown by its individual cost sheet or slip on the debit side of the customer's account, the difference between that and the credit side (the amount ultimately paid in in cash) being the profit (or loss).

Cost Accounts in the General Books.

Could not the tailor or other contractor have his cost accounting a part of his general accounting system? From what has been said it is clear that there is no abstract reason why he should not. For instance, when he makes an agreement with A to supply A with a suit of clothes, he may open A's account in his ledger and on the debit side, as outlays are made, he might debit A with the cost value of the items going into his suit of clothes. When A paid his indebtedness at the agreed-upon rate,

credit would be given him and thus the account would show just what had gone into A's suit and what had been realized from it, the result being a profit (or loss) and as such transferred to profit and loss account. Here the entries would be carried as an integral part of the bookkeeping. For instance, if three yards of cloth were used in making the suit of clothes, this might be entered as a credit in cloth or stock account and then entered as a debit in A's account. When A paid for his clothes he would be credited with the cash and cash account would be debited with the amount he paid in. Here there would be a perfect double entry, and the books of course would balance if every item was thus accurately determined and entered. Roughly speaking the general ledger would consist then of a series of accounts showing general cash outlays on expense items, as wages, rent, light, heat, materials, etc., and a collection of personal accounts showing debit entries for the apportionment or assignment of these expenses that went to the working out of the different contracts. Whenever money was originally spent for, say, materials, it would be a credit in cash and a debit in materials account. Whenever materials were drawn from the stock on hand and worked up or whenever labor was exerted, it would give rise to a debit in the account relating to the particular contract on which it was expended, and a corresponding credit entry in the account relating to the kind of material or labor which was drawn upon. If 50 yards of a certain kind of cloth were cut up on a certain day for a number of different suits of clothes, material account would be credited with 50 yards of cloth at the cost value thereof, while the various personal accounts would be debited with the several quantities of cloth that had gone into the making of the several suits of clothing. The "cost accounting" would be seen in the fact that there had been a segregation and assignment of cost elements to every operation or transaction involving

the use of those elements for the production of a particular result. Here, it is plain, the cost-keeping system would be a part of the general bookkeeping. This might be managed by the same general system of tickets or slips accompanying the work in process that has already been described, the accounts in the ledger being written up from these slips as original records, or the slips might be recorded in some book of original entry or filing system prior to writing them up in the general ledger. This would be a detail to be arranged as the particular business and its needs might require. Would this be a desirable way of handling the problem? "The ideal cost account," says Mr. Lisle, "is one which is kept as a part of the double entry bookkeeping. Under such a perfect system the manufacturing or trading account is done away with, and its place is taken by as many departmental or separate cost accounts as there are departments or different articles manufactured." Mr. Lisle's statement is undoubtedly correct notwithstanding the fact that many concerns do not attempt to keep their cost accounts as a part of the general books for reasons which we shall enlarge on presently. It does not follow, however, that such an ideal cost accounting will thus be kept directly in the general books even though the cost accounting is carried on as "a part of" the double entry system.

Cost Books.

It is clear that as soon as work arrives at any great degree of complexity the number of entries requiring to be made in any given cost account is far too great to admit of their being kept in the way just indicated. Moreover as the degree of complexity of the work becomes greater and as the elements of general expense which must be estimated and apportioned become more and more difficult to determine with accuracy, it will be proportionately harder to maintain a correct double entry system. The

first step away from the system already indicated will undoubtedly be that of transferring the accounts of the several contracts or pieces of work in progress into a so-called "contract ledger." This will be analogous to the simple "sold ledger" which we spoke of at a much earlier point in our discussion (see p. 31). The transfer is here merely a matter of convenience, the personal accounts being perhaps retained in the general ledger in a simple form, the debit entry for A, for example, being "To 1 suit of clothes......$40," and the credit entry "By cash...... $40," while the real details of what has gone into A's suit are kept in a contract ledger, a "contract ledger account" being ultimately established in the general ledger for the purpose of showing actual profits or losses realized. Or the contract ledger may be treated simply as a convenient form of record, the debit entries only being set down in the various accounts and being then transferred to the debit side of the personal accounts in the general ledger. In this case the situation is just the same as it was when all of the accounting was recorded in the general ledger, the only difference being that the details are for the sake of convenience collected in a separate book. This method has the advantage of rendering it possible to write up the subordinate books from period to period, merely transferring the totals to the general ledger. Thus, for example, the contract ledger could be posted only from such a set of tickets or slips accompanying the different contracts as has already been described or from these in conjunction with a "stores issued" book in which would be recorded the amounts of goods drawn from the stock on hand for consumption or working up. So also either the pay-roll or an abstract of wages paid could be used for the purpose of posting wages. Then, say at the end of each week, the total wages paid could be posted to wages account in the general ledger, total stores issued could be posted to materials account or the various materials accounts in the

general ledger, etc. The tickets or slips accompanying each order or contract would furnish the data for posting to the debit side of each contract in the contract ledger. It is plain that if a debit entry were made in some contract account for every item of goods or labor used and if all items of goods or labor used were credited to the proper accounts in the general ledger as totals, the gross debit entries in the various contract accounts would equal the gross credit entries in the various outlay or materials accounts. The general ledger would thus be kept compact with but few entries while the details of wages paid would be obtained from the pay-rolls or an abstract of pay-rolls, the details of materials used would be obtained from a book kept for that purpose, etc. Suppose that some error had been made in assigning elements of cost to the different pieces of work—say, for instance, that the cloth for A's suit of clothes is set down as 3 yards worth $12 on his voucher or slip, whereas in the record of materials issued it appears as $11. Here there is a discrepancy of $1. This means that whereas a credit entry of $11 will be included in the general credit entry for the week in materials account, a debit entry of $12 is placed on A's account or Contract No. 1 or whatever it is called. This will be equalized when the books are balanced since when A pays his bill this will give rise to a credit entry of $40, the originally fixed price of the clothes, in his account, and a debit entry of $40 in the cash account. A's account will be balanced by transferring the profit on his contract, say $5, to profit and loss. In balancing material account it will be necessary to ascertain the value of the goods remaining on hand by an inventory process, the balance, of course, being transferred to profit and loss. The same thing will be true at other points at which the estimate of cost on the several contracts has not been strictly accurate. The variation, whether in favor of or against the concern, will be transferred to profit and loss and will there simply make profit

greater or less, or less or more than it would otherwise have appeared. An approximation to accuracy will, however, have been attained, the cost system continuing as a part of the general books. Somewhat the same end could be attained by carrying what is known as a cost adjustment account.

If the purchasing system of the concern is elaborate, a bought ledger precisely similar to the bought ledger of the retail business (see p. 31 foregoing) will also be needed and will be carried on parallel with the contract ledger, of which it will be the obverse. This bought ledger will relieve the general ledger of the accounts which are entered in it. Both for it and for the contract ledger a system of subordinate books will be needed. Thus subsidiary to the bought ledger will be the bought ledger cash book, bills payable book, etc.; and subsidiary to the contract ledger will be the contract cash book and bills receivable book, as well as others intended merely to classify transactions and render the posting easier.*

Cost Ledger.

Another step toward putting the system of cost keeping into a more perfect form may be taken by the establishment of what is called a "Cost Ledger." Such a cost ledger for contracts of the kind that we have been speaking of is illustrated on page 137. A cost ledger is simply a continuous summary of outlays on the same general principle as that which was adopted for the cost sheet. Where the contract is elaborate and the number of contracts is great it may be deemed best to set aside a given page or pages for each contract. The ledger will then be ruled so as to provide a number of columns on the debit side for the purpose of recording the different elements of cost or outlay. Thus there may be columns showing the number of days or hours of work spent on the contract on a particular day, the wages paid therefor, the

* Cf. Dicksee's Bookkeeping for Accountant Students, pp. 229 ff.

materials used, plant destroyed, the assignment of general expenses and any other items that may be desired. It is customary to put on the credit side of the cost ledger not only the stated contract price but also in a separately ruled column such items of materials as are returned unused, items of tools or plant that are returned in an unused or partly unused condition, and so on. The sum total of debit entries for wages, materials, plant, etc., can then be footed up when the contract is completed and accepted, the total of credit entries can be similarly entered and the difference will represent the profit on that particular contract. Here we have exactly the same principle that was employed in our last hypothetical illustration—that of the contract ledger, the difference being that in this case provision is made for analytical treatment of the different elements of cost. If there are 100 contracts in the cost ledger, the total outlay for wages, materials, etc., on all contracts, should equal the total amounts of expenditure indicated on the corresponding outlay accounts in the general ledger. Before closing the cost ledger there will be drawn off or written up a summary of the cost ledger in which will be exhibited the summarized results of the outlays on each contract as well as the summarized results of all credit entries (contract price, materials returned, etc.), while there will be inserted columns showing profit and loss on the various contracts which, when summarized and offset against one another, will show net profit or net loss for the period under consideration. The double entry system of the cost ledger would not be complete by itself if it included only what has been set down. By opening a contracts account and posting totals to it a check is obtained which may be availed of for the purpose of locating any error. The cost ledger has been closed when the total footings of all accounts therein have been made and found to agree. If the results of each separate contract as exhibited in the cost ledger are transferred to the per-

sonal account relating thereto in the general ledger, there is no need of maintaining a contract ledger although this may be done if desired. The relation of the cost ledger to the other ledgers or to the general ledger is no different from that of any ledger, if the accounting be carried on as above indicated. The contract ledger (which is analogous to the sold ledger of a trading concern) may carry on the debit side of each account the contract price at which the work was undertaken and carried out, while on the credit side will be recorded payments made from time to time until the agreed sum is liquidated. Thus suppose an account to be opened with "Contract No. 1—John Smith & Co.," the entries are as indicated. Meanwhile in the cost ledger a similar account is opened where the actual outlays on Contract No. 1 are recorded as they are made from general cash, being debited there as fast as they are paid and credited to cash. When the account of Contract No. 1 is closed in the cost ledger it shows either a profit or a loss. Transferring this to a contracts account which supplies a means for recording the final data obtained from the accounting, there will appear a series of debit items showing losses, if any, on various contracts performed and a series of credit items showing profits, if any, on the various contracts. This is practically a trading account which will furnish the material for writing up the profit and loss account in the general ledger. The accounting shows what has been gained or lost on each contract, the assumption being of course that the cash can be collected to the full contract amount on each. When a contract is paid for, the general cash account, of course, is debited, while the account with that particular contract or the person in whose behalf it has been undertaken is credited. The cost ledger does not enter into this transaction at all. It has done its work in segregating the debit entries which were necessitated by the payment of cash from time to time and in comparing them with the amount of cash which it is

expected to receive. Of course all the subsidiary books already referred to will necessarily be carried on and their number will depend upon the character of the business. Such subsidiary books will include the stores or material-issued book, the stores or material-returned book, the plant-issued and plant-returned books, the stores-purchased book, and others as needed. Where the business is simple it is possible to carry on the accounting for the stores issued, purchased and returned in the same book by having appropriate rulings. A sample sheet of the cost ledger is shown on p. 137. On p. 138 is given a sample sheet of a material record.

Analysis of Costs.

Enough has now been said by way of illustration to show how the cost books of a concern are designed and the purpose for which they are carried on. It is next necessary to inquire whether all cost analyses can be made upon the principle just indicated and, if not, what principles of analysis of cost must be employed in order to render possible a cost-keeping system which will attain substantially the same end. Just here it is well to note that the illustration assumed for purposes of discussion is the simplest that could have been given. It will be noted that we base our analysis on the assumption that what the manufacturer or producer sought to do was to keep his account of costs with a series of individual contracts each of which was supposed to be separately accomplished, and to give rise to a series of items that are immediately turned over to a purchaser who has contracted for them at a definite price. This is truly enough representative of certain classes of business such as is seen in the case of engineering works, the construction of machinery of various kinds on order, the performance of simple production (as in the case of clothing manufacture in the illustrations already given) and in many others.

Contract No. 1.

HOUSE ON CONNECTICUT AVE.

Month Ending June 30, 1910.

Dr. | Cr.

Wages			Overhead Charges.		Materials.		Plant.		Equipment.		Cash.		Contract Price.		Equipment Returned.		Plant Returned.	
Fo.	Days	$	Fo.	$	Fo.	$	Fo.	$	Fo.	$	Fo.	$	Fo.	$	Fo.	$	Fo.	$

Note.—An abstract of the cost accounts will show:

(a) Wages paid for period agreeing with wages account.

(b) Cash paid out directly on work as taken from cash book or invoice book.

(c) Material, plant, etc., agreeing with same items credited to material account, plant account, etc.

(d) Overhead charges (if apportioned as above) agreeing with debit to that account in General Ledger.

ANALYSIS OF COST.

Dr.		Cr.	
From Folio		From Folio	
Wages		Contract Price	
Overhead charges		Equipment Ret.	
Materials		Plant Ret.	
Plant		Loss	
Equipment			
Cash			
Profit			

MATERIAL ISSUED.

June, 1910.

Contract No. 1.		Contract No. 2.		Contract No. 3.		Contract No. 4.		Contract No. 5.		Contract No. 6.		Contract No. 7.		Contract No. 8.	
No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$

Note.—In the columns headed "No." will be recorded the number of the requisition for supplies or material, such requisitions being filed separately and constituting a record of all issues. In the columns headed "$" are recorded the cost value of the material issued. The book might be ruled with selected headings at the top of columns showing standard classes of supplies issued, as lumber, nails, etc. The requisitions could be made to show the contracts for which the issue took place.

It is not the case, however, with those businesses where the processes are continuous and where the product is turned out not on the basis of an established contract price, but upon that of future sale at such price as the market may warrant. For example, take the case of a factory producing plain cotton goods for the purpose of building up its warehouse stock in order to meet orders which it knows will be received during the coming season, or the case of a shoe factory which devotes itself to producing a full line of sizes of various grades of footwear, knowing that there will be a demand for footwear and expecting to supply this demand by selling the output in its retail stores which it may have established here and there. Such enterprises cannot organize their cost systems in the way already indicated. They cannot do so for the reason that the basis of accounting previously adopted is absent. Although it is very desirable to establish a unit cost for the cloth per yard, it is not possible to keep account with every yard of cloth produced. The same is true of the shoes. It may not even be possible, as in the cases already cited, to keep account with every par-

ticular batch of output. Here the difficulty lies in the fact that a new basis for the cost accounting must be sought. The basis desired is that of unit cost in the last analysis, but this can be secured only by keeping account with processes. Thus is presented perhaps the most difficult problem of cost accounting—that of accurately getting at the costs involved in the various processes through which goods pass in their progress toward completion.

Bases of Cost Accounting.

We have now laid the foundation for an understanding of the different bases upon which cost accounting may be carried on. The first was that of individual contracts or pieces of work, the second that of processes. The latter, however, may be still further subdivided. In a machine type of industry it may be resolved to keep track of the cost by machines or it may be determined that the best system is that which will take account of the whole process in which these machines are used. If, for example, there are three classes of machines through which a given product has to pass on its way to completion, account may be kept with each of these machines. Thus, say, logs are taken into a planing mill and are run through saws which convert them into boards. Then they are run through planers for the purpose of smoothing, then they may be tongued and grooved in order to provide means for fitting them together when they are laid. Supposing that in this mill the saws, planers, and the machines for tonguing and grooving are grouped together in different parts of the plant, it would be possible to keep track of the amount of work done by each machine—that is, the number of hours it was run, the estimated expense of running it, the estimated depreciation, etc. If all the work were done by the use of machines and if every machine were thus kept track of, a basis for the cost accounting would be established. Or, it might be decided to base the account-

ing upon processes. In this case, every time a piece of material was put through a given process, opportunity would be offered for entries in the account relating to that process. To sum up what has been said, we may enumerate the different methods of keeping costs in their principal forms as follows:* (1) The cost system in which the records are kept according to order number; (2) the cost system in which the records are kept according to departments; (3) the cost system in which the records are kept according to the operations or processes; (4) the cost system in which the records are kept according to machines. The explanations already given indicate the method of the accounting according to the basis which may have been adopted. In the case of the order number system the cost sheet is prepared so as to analyze expenditures on the given order; in the department system the cost sheet represents the results for the department; in the operation or process system the sheet is kept for the operation or process and the results show expenditures and incomes resulting from that process; in the machine system the cost sheet represents results for given machines or sets of machines. In every case the ultimate object is that of ascertaining cost per unit. The accounts in the cost ledger follow these cost sheets and the cost ledger, if one is kept, is related to the other books in the way that has already been described. Essentially, then, the problem in cost accounting as applied to modern business is twofold: (1) That of ascertaining the best plan for analyzing costs in the given business and of organizing the business to correspond; and (2) that of assigning a given rate of expense or cost to various operations or processes in those cases where the exact ascertainment of the cost involved is not practicable. It is to be noted that the accounting scheme is the same in all of these plans, the difference residing

* The classification here given is found in C. M. Day's Accounting Practice, pp. 91-2.

solely in a difference of organization. The basis of the accounting scheme lies in the fact that cash is paid out from cash account for the various elements of cost which may be reckoned as raw material, labor and expense and that these different items and the accounts corresponding to them are drawn upon for the means of carrying on the operation or performing the unit of work or contract which has been accepted as the basis of the cost accounting, while this operation, process, or other basis of arrangement is conceived as furnishing completed goods either to some other operation, process or the like or to the selling end of the business, thus in the last analysis bringing in cash from the outside world which goes to cash account. From this it is plain that as cash is paid out it is credited to cash account, while corresponding debits go to material, labor, and expense or are subdivided among the various accounts belonging to the groups thus indicated. In the cost sheets or accounts the material, labor and expense paid out are debited to the various contracts, processes, machines, or units of product which have been accepted as the basis for the accounting. The completion of processes, contracts, etc., results in crediting the cost sheets or accounts with the value of the work turned out which may then be debited to a production account, and when the goods are sold or transferred, production account receives corresponding credit, while the amount of cash realized is debited to cash account.

Selecting a Cost System.

From what has been said it will be appreciated that in selecting a cost system the matter of fundamental importance is to get a system that is well adapted to the business in question and that permits of substantial accuracy. Unless a cost system is reasonably accurate it is not only useless but even may be injurious or detrimental to the welfare of the business. We have seen that where actual

expenses can be apportioned there is a very great utility in the adoption of some system that will permit such apportionment. For example, in the case of given orders or contracts, it is entirely possible to segregate the outlays as indicated. As soon as percentages of general expense and the like must be computed, the cost system begins to drift away from absolute accuracy. It is in many cases possible to adopt a trade value for the unfinished product of given departments and operations but this trade value merely represents what the concern would have to pay to get the work done elsewhere and may correspond only in a very rough general way to the actual cost in the plant itself. Probably in a concern where the process of production is carried on upon a large scale and where the trade value of goods is not a satisfactory guide, even approximately, to an estimate of actual costs, the best results can be obtained by frequently re-establishing the estimated unit cost of the work, drawing this unit cost from the records of expense outlays that are indicated by the cost sheets exhibiting actual results in the plant. An illustration of how this system may be applied in a very large concern which, however, works upon the basis of separate orders, may be seen in the system adopted for the government printing office as set forth on pages 327, ff. of Part II of the present volume. Under such conditions as this, the cost system becomes essentially statistical in its character and there may be ground for doubt whether it is worth while to endeavor to apply the cost system as a part of the general bookkeeping or accounting at least in more than a very broad way. It is undoubtedly the case that, particularly where the business is very complex, as in the case of railroads for example, much of the most valuable cost data will be obtained only by statistical analysis based upon the accounting data that are supplied by the general accounts themselves. A great deal of the most valuable information about business, particularly about

forms of business which employ large fixed capital, cannot always be put into pecuniary form. That is to say, the results of a given operation cannot be stated in terms of money. We have already noted this difficulty in those cases where a purely fictitious or trade value is placed upon the uncompleted results of given operations. In the case of such an enterprise as a railroad, for example, conclusions as to the business of the road may often be obtained in best form from statistical analyses showing the number of units of a certain kind of business performed in a given unit of time. Thus the records of the road may show the amount expended for hauling freight of various kinds, the distance traveled, etc., and the amount realized from each consignment of freight. It is not possible to divide such items of expense as the interest on bonds or the overhead charges, such as salaries of officials, etc., between freight and passenger traffic or between the iron ore hauled and the dry goods. An attempt to assign costs in that way would be absurd. A great deal, however, can be learned from statistics showing the number of miles traveled by freight which can be reduced to so-called ton-miles, the unit here being the task of hauling a ton of freight one mile, or from a study of passenger statistics showing the number of passengers transported a given number of miles which of course can be reduced to passenger-miles, the unit here being the work of carrying a passenger one mile. By the establishment of such units of work and by comparing the number of such units performed in the course of, say, a year, it is practicable to draw conclusions as to the density of traffic on the road as compared with general density of traffic and to ascertain by comparison with expenses arranged in large groups, the comparative cost of passenger or freight traffic, leaving the non-distributable charges out of account. The aim of these railway statistics is thus not to determine costs so as to gauge the margin of profit as is usually the case in business cost accounts. In the highest

sense of the term, statistical analyses of business operations, designed to show unit costs or density of business per unit of plant employed or capital invested, are "accounting." They may not be based upon a formal bookkeeping foundation or be made to fit into any scheme of corresponding double entries, but the accounting idea is present. This is the idea of analysis of business and apportionment of results or incomes to efforts or outlays.

Accounting Controversies.

Sharp controversy has raged for a good while about analyses of cost, different elements of cost, etc. Of course the elements of cost are the same when considered in the abstract—labor, material and expense, including in the latter the cost of using capital, the cost of obtaining services of various kinds, etc. But these items are combined in different ways and vary materially from plant to plant. The raw material of one business is the finished product of another and there may be room for substantial doubt regarding the assignment of a given factor in production at any given time. Cost accounting is still undergoing rapid development and in practical application it is likely to change very rapidly and very materially within the next few years. The changes will be in the direction of better analysis of costs, better organization of business, more minute apportionment of outlays and the like, but the fundamental principles at the bottom of all cost accounting will remain the same.

X. PROFIT AND LOSS ACCOUNTS.

Relation of Profit and Loss to Business.

We have already had something to say with reference to the profit and loss account of the ordinary retail business. We there showed that the determination of profits or losses arising from a given industrial operation or business

transaction was the important end toward which the accounting of the business was directed. Subsequently we also saw that the profit and loss account furnishes the information necessary for use in completing capital account and for showing whether capital has been increased or impaired. While in ordinary business the technique of profit and loss accounting is comparatively simple, increasing complexity in business operations raises two points of very serious difficulty and importance: (1) How to allocate, so far as possible, profits and losses; or, what is much the same thing, how to divide the profit and loss account so as to show the distribution of profits in the gross, and (2) how to represent in a correct way a given outlay as providing a permanent addition to the business, or as constituting an actual expense which is a loss since it does not provide any element of future strength for the business but merely liquidates a liability which has already accrued. The general question of profit and loss account may now be reviewed at some length analytically and in the light of the studies already made of other accounts.

General Profit and Loss Account.

In dealing with the question at the outset, we saw that general profit and loss account in a retail business consists on the debit side of a series of entries of expense or outlay and on the credit side of a series of entries representing incomes, the chief entry there being the gross profit realized on goods. Later on we saw that for the purpose of getting a general idea of conditions in some one branch of a given business, as, for example, in a given class of goods in a retail business, it may be deemed wise to enter some elements of expense along with goods as a means of assigning those particular expenses to that particular department, thus establishing what was called a "trading account." In the latter case, it was seen, there is left for entry as debits in the

profit and loss account properly so-called, only the general expenses of the business which are not capable of allocation or which it is not deemed wise to try to distribute. In both of these cases, an extremely simple form of profit and loss account is presented. In the first we have as debits such simple items as elements of expense of a representative kind like rent, fuel, light, discounts, etc., while our credits were simply the obvious gain on goods sold. In the latter case (where a trading account was employed) we simply had a few of the special expenses assigned to the departments where they were incurred, and then in the profit and loss account in general we retained on the debit side the general representative expenses, and the gross profits on the credit side.

Sections of Profit and Loss.

Clearly such a profit and loss account is unsatisfactory for two reasons: (1) It fails (even where some trading accounts are kept) to distribute profits and losses among the different branches of business, and (2) it fails to show what use has been made of profits. This may be a very serious defect in a business of any degree of complexity. The difficulties objected to can be overcome by segregating profit and loss into several sections. What shall these sections be? It was suggested at an earlier point, that the sectional division adopted might be one based simply upon the establishment of an account for each of the elements of expense entering into profit and loss. Thus for example we might open accounts with "Rent," "Wages," "Fuel," "Discount," etc., finally closing them all into profit and loss which is thus a summary. If the business conducts a number of different departments, each with a trading account of its own, these will be closed into profit and loss in the same way, the gross profits appearing on the credit side, in which case profit and loss is simply a summary statement of the "sections" or trading accounts which are

constituted of the different expense items (debits) and the different income items (credits), and which show gross profits. This, however, is not a complete way of dealing with the situation. The summarized profit and loss account which has been thus described may be itself divided into sub-sections. For a retail business the first section which it is desirable to recognize is that of trading operations. In this case total sales would be credited after deducting trade discounts and returns, such credit either representing the total sales in all departments or, if desired, the sales classified by departments. The debit side of such a first section would as usual show the cost of the goods disposed of, amounts paid for freights, discounts allowed, etc., as well as all outlays directly growing out of the selling process. By keeping in this first section of profit and loss the gross results of the departmental business on the one side and the gross actual trade expenses connected with the actual selling process of those departments on the other, the first section of profit and loss account is made to show the total gross profits realized in all departments. This may now be totaled and the balance of gross profit may be carried down on the credit side. The second section of profit and loss now may be developed. It is immediately opened with a credit entry representing gross profit as ascertained from the first section. Other items of income may now be credited representing such sources of revenue as did not grow directly out of selling operations. For example, if the concern has leased a certain part of its premises to others there will be income in the shape of rent for this lease. This will now be credited along with any other revenue items that are derived from a non-trading source. The debit entries in this section will be those which do not grow out of actual selling operations. Examples would be fixed rent paid, general salaries and the like, as well as business losses, bad debts, etc. By balancing this part of profit and loss, we shall obtain a result which will show

the actual business profit free of all ordinary costs or outlays involved in the general management of the business. There may, however, be other deductions to be made before we are able to recognize the profit apparently shown by the business as a true net profit. A third section of the account may, therefore, be opened and to this the term "net profit account" may be assigned. This is opened with a credit entry representing the ordinary profit shown in the preceding section, and there will also be credited incomes that are directly connected with capital, such as the results of investments that may have been made, interest earned, discounts obtained, etc. On the debit side, will be entered all those outlays growing out of, or depending upon, the use of capital, chief among which will be the interest on loans and the like. The balance of this section gives the net profit realized by the concern and represents what the business has left after paying (a) its actual selling expenses not allocated in the various trading accounts; (b) its business expenses, taxes, overhead charges, losses, and the like; and (c) the cost of keeping borrowed capital at work and other expenses connected with capital. Still the account as thus balanced does not show what distribution has been made of the net profit exhibited. As we saw in our foregoing treatment (see p. 92), it may be, in many cases, will be, desired to set apart some portion of the profits for the purpose of establishing a reserve or a fund for depreciation, or for other purposes. Moreover it may be desirable, if the business is a partnership, to show distinctly how the distribution has been made among the partners, or if it is a corporation how the distribution of net profit has been made between the different classes of stock. This final section of profit and loss account may be called "profit and loss appropriation account." It will be opened on the credit side with the total net undistributed profit shown by the preceding section and there will be no further credit entries. The debit entries will show the distribution as be-

tween different sharers in the profit, reserve, undivided profits, etc. To make this whole method clearer we may present the following illustration of such a subdivided profit and loss account as is here contemplated.*

PROFIT AND LOSS ACCOUNT.

Expenditure.		Income.	
To cost of goods less discounts, " outlay involved in selling goods, including commissions and expenses, wages of clerks and others, freights and expenses, cash discounts, " balance carried down as gross profit		By gross sales less trade discounts,	
To fixed expenses, including, Rent, taxes, etc., Repairs and running office costs, Overhead charges in general, Depreciation, " business losses, such as Bad debts, Defalcations, " balance carried down as profit on ordinary business,		By balance brought down as gross profit, " income not due to selling such as, Rents, Income from other outside sources,	
To expenses in getting capital, such as Interest on bonds or loans, " balance carried down as net profit,		By balance brought down as ordinary business profit, " income from use of capital, such as, Income from investments, Interest earned, Cash discounts secured (of certain classes),	
To allocation of profit, Interest on capital, Profit assigned to capital, Profit segregated as reserve, " profit undivided and carried forward,		By balance of net profit brought down,	

* See Lisle: Accounting in Theory and Practice, pp. 57, ff.

Uses of Profit and Loss Account.

What has been said indicates the main purpose of the profit and loss account and suggests the ideas and character of information which can be obtained from an analysis of a carefully kept profit and loss statement by a student who wishes to find out what the concern has been doing. The profit and loss account, if kept in the way already indicated, will show the amount of the operations of the business as a whole as well as the amount of the operations of the various departments considered. But, in addition, it will also show the total amount of expenditure and the amount of expenditure in each several department resulting from the given volume of operations. From this can be inferred, as already indicated, the gross profit which is realized on the selling branches of the business. It is, moreover, possible to compare the overhead charges which are necessary by reason of the method of organization of the business, the amount of the salaries of its officers, the cost of its general expenses due to the payment of rent, and the like. These can be contrasted with the volume of business that is being done and the profits that are being earned in consequence. From this, it is possible to deduce a definite idea as to the relation of general management expenses to the total operations and to recognize a condition, should it arise, where too much is being expended upon general management as compared with the actual practical operations of the enterprise. From such a profit and loss account, too, it can be seen how far the concern has lost through unforeseen conditions or through conditions which were not due to slack sales but to bad judgment, such as in trusting, or giving credit to, the wrong person. The final section of the account shows what proportion is borne by fixed charges, reserves, etc., to the total net profit, if any, and this, of course, suggests the conclusions or inferences which are unavoidably to be drawn from the show-

ing made with reference to the relation of the fixed charges to the general net income realized on the capital, whether that capital be borrowed or directly placed in the business by the shareholders or partners. Thus it is possible to analyze the condition of the concern from a large general standpoint. This would not have been possible in a profit and loss account, however accurate, where no distinction was made between the different sources or kinds of profit and the different sources or kinds of income and where no effort was made to compare those sources or kinds of profit or income with the sources or kinds of expense or loss that were directly and intimately associated with them or that were due to the same broad conditions. The general principle which we have pursued in sub-dividing profit and loss account has been merely that of analysis, elements of profit and loss arising from the same conditions being grouped together in one section of the account on the credit and debit sides respectively, the balance there exhibited being then transferred to the next section as an opening credit (or debit, if the outlay exceeds the income).

Income and Expenditure.

It is clear that in thus analyzing profit and loss account we have substantially abandoned the narrow conception of "Profit" and "Loss" although we may find it convenient to retain these conventional names. What we have done has been to substitute an analysis or grouping of incomes and outgoes. The profit and loss account is thus seen to be really an income account in some of its aspects. The term "Income Account" is by some reserved for the section of profit and loss which we termed "Net Profit Account" and sometimes for a combination of that and the preceding business profit account or section (the second of those enumerated above on p. 147). It is obvious that in dividing incomes and expenditures among these various sections it may be difficult to tell in any given case whether a speci-

fied outlay of money belongs in one section or in the other. This difficulty will arise because it is not possible in every case to know the precise purpose for which the expenditure is made and consequently the precise effect it will have. In the same way it may be difficult to determine definitely whether a given income is assignable to one or the other section. It may be said in general that all incomes and expenditures may be divided into two classes—capital income and capital expenditure, and revenue income and revenue expenditure. This idea needs, however, some further elucidation. Suppose that a concern has started business with a given amount of invested capital, say $8,000. It may be supposed that $2,000 of this is invested in real estate, $1,000 in fixtures and plant, and the rest in goods. Now if in the course of the year an addition be made to the real estate or building in which the concern is located costing, say, $500, this being paid out of the regular incomes, it is evident that the "expense" or "loss" thus incurred is not a "loss" in the sense that it is a sacrifice of the amount spent. The amount expended constitutes an additional investment. Supposedly it would be credited to cash and debited, perhaps, to a betterments and improvements account. It would in that case appear on the debit side of profit and loss account, being presumably assigned to the section of profit and loss which deals with the expenditures and incomes distinctly relating to capital (the third section in the analysis made on p. 148). This would be an actual outlay of cash, and as such, would constitute a deduction from total revenue since it is paid out of total revenue. Clearly, however, such a showing would not tell the whole story, inasmuch as there would be no indication of the existence of an item of capital or permanent investment growing out of the transaction. Unless, therefore, there were a credit entry showing an increase in assets of the value of the amount invested, the account would be incom-

plete. If this outlay had been directly credited to capital in the first place as it might have been where an individual was carrying on business alone, or to surplus (practically a section of capital account) where the concern was a corporation, there would have been as before a credit in cash and a debit to betterments. This would now be supplemented by the credit to reserve and a debit to the particular asset account concerned—in this instance, real estate. In that case the object of truthfulness would have been fully attained since it would have been shown that there was an increase in the capital assets of the concern of $500 and a decrease in the floating cash on hand of $500. The profit side of profit and loss would not have been brought into the transaction and perhaps need not have been. It is, however, plain that such an arrangement of the entries would not have given the whole data. Inspection of the profit and loss account would have revealed nothing about the transaction to one who merely looked at profit and loss and at nothing else. If the credit entry is made in cash when cash is paid out a corresponding debit being assigned to "betterments and improvements"—and if at the end of the year or other fiscal period the debit balance in betterments and improvements be transferred to the debit side of profit and loss as a loss, the account will merely show that there has been an item of outlay or loss which has been incurred for the purpose of enlarging or improving certain fixed assets. Yet the increased assets are actually a gain to the business and corresponding credit entry in profit and loss to represent such an addition to wealth could be secured only by crediting an account with the amount of assets or cash which it supplies to the business as we did in the case of "reserve" and then taking this up upon the credit side of that section of the profit and loss account which represents the outlays and incomes connected with capital. In that event the profit and loss account would show that there had been an in-

come of assets received by the concern and an outlay of cash on improvements. In the last analysis, in such a case, profit and loss would show a profit which was partly made up of cash and partly of fixed assets that had come into the possession of the concern and it would show a loss that was partly composed of outlay for running expenses and partly of outlays for the purchase of the new fixed capital. In this case by carrying the transaction through profit and loss it would be shown that there had been an outlay of income in the form of additions to fixed capital. The income statement, really a more detailed description of profit and loss, would show the destination of income and the use made of it, as well as the fact that this income was on hand in a fixed form. While this system might be theoretically correct, it is customarily desirable to have the profit and loss account deal only with cash incomes and cash outlays. If, therefore, upon spending cash for the improvement already referred to, cash account is credited, betterments account is debited, the transfer of this debit is made to profit and loss and nothing is said of the growth of the assets, the profit and loss statement will show that income has been expended in the way indicated while, by crediting capital or reserve with the value of improvements made and debiting the corresponding real account, the fact that capital has been enlarged to that extent is sufficiently indicated. This case is clear enough in so far as concerns the nature of the outlay. But there are many cases in which the nature of an outlay is not so easily determinable. For instance, if in the case cited, the outlay had been made for the purpose of putting a new roof upon the building occupied by the concern, it might fairly be questioned whether this was an addition to fixed capital or whether it was simply a restoration of capital that had become worn out, the cost of the restoration being in that case obviously a real loss or cost of doing business. If in such a case repairs account was debited and cash credited, repairs would prop-

erly be closed into profit and loss without any other accounting, and it would be seen that a part of the expense or outlay of the concern had been for the purpose of maintaining capital in as good a shape as it was at the start. The question whether to regard a given outlay as intended for the purpose of and actually accomplishing, an enlargement of the capital assets, or to treat it as actually an outlay for running expenses is always difficult in any business where the question of depreciation enters in. Thus in concerns employing machinery very largely a certain expense of maintenance has to be met each year and it is always an open question how far repairs on such machines are actually an element in the necessary and unavoidable cost of operating them and how far they are correctly regarded as a provision against depreciation, tantamount to an increase of capital as compared with the situation which would have existed had there been no such provision for upkeep.

Income Sheet of a Railroad.

The foregoing principles may be illustrated to an extent by considering the income statement for railroads suggested by the Interstate Commerce Commission as properly the one to be employed in reporting conditions for a fiscal period. This income statement may be regarded as in a true sense a representation of a profit and loss account in a different form, the debit entries and credit entries not being arranged on opposite sides of the page or in the conventional way which is demanded by accounting. It will be seen from the form herewith presented, that the income statement gives substantially all the items already referred to. There are shown the gross operating revenues, operating expenses which correspond to the balances of the trading section of profit and loss account. Then are given the results of rentals and other sources of income both actually realized and accrued, as well as the

incomes earned from investments—these corresponding to credit entries in the second and third sections of profit and loss account as above given. The debit entries are seen in the showing made with reference to outlay on these same general accounts, while what corresponds to the apportionment (the last section of profit and loss as above analyzed), is shown in the statement of Interest Accrued, Sinking Fund Charges, Dividends Declared, etc. This affords all of the items of information already referred to although the formal grouping is not put into the technical shape demanded by accountancy.

Business Results.

It is clear that the profit and loss statement or income sheet will not show the business results of the concern in any satisfactory way unless all of the entries have been made upon a basis of good judgment and unless every item of income and expenditure has been included. The showing of profit and loss will be incomplete and unsatisfactory unless there is some allowance for such items as Depreciation, Reserves, etc., intended to cover the actual wearing away of fixed assets and the provision for the losses which are certain to fall upon a concern in realizing upon its assets no matter how conservatively they may have been valued. Some personal accounts will always turn out to be bad and many fixed assets if sold will realize less than the amount at which they were originally bought and frequently less than the amount at which they were carried on the books. Profit and loss account, then, shows the true result of the operations for the year or other fiscal period only after due allowance has been made not only for all elements of income and outlay in the form of cash, but after proper allowance has been made for all incomes and outgoes that take the form of increases or decreases in ownership and value. When this has been done, the balance of profit and loss shows the net increase in value that has

occurred during the year and consequently the state of the assets and liabilities as affected by the operations of the year. Clearly, too, the results will be correctly shown only in the event that there has been an accurate taking of stock. For instance, in the retail business concern, we saw that to close goods account it is necessary in the first place to have a careful inventory, or in some way to ascertain the value of the goods on hand, otherwise the results would be incomplete and would not admit of comparison because they would not show where the concern stood. The same thing is true of fixed capital. It is not possible to tell what the result of a year's operation has been unless recognition is made of the fact of depreciation, or, what amounts to the same thing, physical assets are revalued. Such revaluation of physical assets is equivalent to the stock-taking process. If there were a revaluation of such assets at the end of each year or other fiscal period before writing up profit and loss account and if depreciation had occurred as it usually would, this would mean a debit entry in profit and loss corresponding to depreciation. The consequence would be that net profit would be reduced to a corresponding extent. The same result is attained when, after ascertaining what is called net profit, an allocation of such profit is made by debiting in profit and loss account an entry representing the amount set aside for depreciation, depreciation account being thereupon similarly credited. If a credit entry be now made in each of the assets or plant accounts to show the amount of reduction in the value of assets estimated to have taken place in the course of the year, depreciation will be debited. So also in the case of the inventory the question of accuracy in profit and loss will be sharply affected by the method adopted in valuing the goods. If, for example, an old stock is carried along on the books (and in the inventory) at the cost price originally paid for it, when as a matter of fact it has depreciated a good deal owing to change of style or fashion, this merely means that an ele-

ment of loss in the business has been concealed and that profit and loss account has not been conducted in such a way as to make an accurate showing of the results of the business. Here we have another example of depreciation, exhibiting itself in the case of goods where no provision is made for recognizing their deterioration in selling power or capacity to command money.

Profit and Loss Analysis.

From what has been said it will be understood that the showing made by profit and loss account is at all times a relative matter. Profit and loss, as has been seen, may or may not take account of depreciation; it may or may not take account of appreciation; it may or may not represent an accretion of new forms of wealth represented by additional assets purchased out of current incomes. Whether profit and loss shows anything definite or not depends upon the way in which it has been made up. It may show nothing more than the actual surplus of current cash income over current cash outgo. Or it may show the difference between the changes that have taken place in the direction of greater ownership over those that have taken place in the direction of reduced ownership. For example, a concern organized to exploit a valuable patent or franchise which had a definite number of years to run and which had been paid for in a lump sum might show very large profits from year to year resulting from actual operation and yet might be found to be a losing business when the gross profit made was reduced by deducting an amount corresponding to the fact that a year's life of the franchise or privilege had disappeared. The alternative that is offered in making up a profit and loss account is at all events obvious. It may be made to include simply cash or liquid incomes and outgoes or it may be made to include additions to and deductions from capital. If it is the former then the changes in the value of capital do not figure in profit and loss but go ul-

timately to capital account through revaluation of assets or otherwise. It cannot be said that there is a definite determination as to the attitude to be taken by a business on this question in organizing its accounting and in making its profit and loss showing. This is why the auditor or examiner who is going through the books of a concern always studies profit and loss with particular care in order to make up his mind as to the way in which the account has been constructed. If it has been constructed in a certain way, a given kind and scope of additional information may be needed. In another way, the nature of the additional data would be different. A profit and loss account carried on so as to show simply the increase in cash means, due to the selling of goods for more than their cost, deducting the selling cost, has to be supplemented by an accurate statement of the remaining value of goods on hand, or, if the plant is one which employs fixed capital, it must be supplemented by a statement showing changes in the value of such fixed capital, or if the concern has sold goods on credit for sums that are not collectible, thus giving rise to bad debts, that fact must be noted. The question whether a profit is actually available for distribution is thus a very serious one, not only in an accounting sense but also in the broader economic sense which underlies accounting. The subject has been dealt with extensively by the courts both in England and the United States but it cannot be said that there is thus far any definite consensus of opinion as to the legal position of this issue. The matter is clearer where a given form of accounting has been prescribed for a given class of concern and is enforced upon that concern through public examination. Thus the national banking act prescribes that national banks shall not declare a dividend until after they have accumulated a surplus of at least 20 per cent of their capital. In determining whether such a surplus has been accumulated or not, the Comptroller of the Currency ascertains whether the assets of the concern

contain any element of bad paper and if such an element is present it is usually deducted in estimating the surplus. But what is comparatively simple with a financial institution is very far from simple when trade values, fixed capital of doubtful worth, stocks of raw materials which are fluctuating in value, and other items of the same sort are brought into question. Here there may be a very fair difference of opinion as to whether a concern has made a profit or not, or incurred a loss or not, and the question can be settled only tentatively and by the use of good business judgment.

Declaration of Dividends.

Upon the question whether a profit has or has not been earned depends ordinarily the action of the concern in declaring dividends. It may be good judgment not to declare a dividend even when a profit has been earned but to keep it in the business for the purpose of enlarging operations and rendering possible a larger volume of business. If there is a good deal of what is called "water" in the capitalization, it may be very desirable to keep the profit in the business for the purpose of bringing the actual worth of the assets nearer to an equality with the capital stock that has been authorized and issued. Conversely, it may be good policy to declare a dividend when a nominal loss has been incurred, such loss being perhaps simply due to reinvestment of profits in assets whose increased value does not appear in the profit and loss account. For example, if a concern of $25,000 capital has in the course of a year invested, say, $5,000 in new machinery, paying therfor out of current receipts which would otherwise have appeared as profits, its profit and loss account may not show any profit. If the concern has a fair balance of cash the declaration of a dividend might well be warranted on the ground that a substantial earning had been made and that, through its reinvestment, any immediate necessity for further investment of the same kind had been avoided. The declar-

ation of a dividend is at all times largely a matter of policy. A concern whose assets are recognized as declining in value and likely to continue to decline, as in the case of the concern which is working a terminable patent right or franchise considered in a former illustration, may be perfectly justifiable in declaring a dividend if the conditions are known to the stockholders and, if they realize that by accepting a dividend which represents a division of such a profit, they are really accepting a partial return of their ownership in the capital of the concern. The profit and loss account must be studied in connection with the balance sheet and this will next be undertaken. It must however be borne in mind that even when studied in connection with the balance sheet the same questions as to depreciation, appreciation, representation of accrued assets and liabilities, etc., that have already been spoken of in profit and loss are still present and require to be taken account of the more carefully in the balance sheet if they have not been dealt with in profit and loss account. If they have not been provided for in the accounting at all, the same remarks that apply to profit and loss apply in like measure to the balance sheet after profit and loss has been incorporated therein.

XI. THE BALANCE SHEET.

Object of the Balance Sheet.

A brief reference has already been made to the balance sheet in speaking of bookkeeping and of the methods of stating the affairs of a business (See p. 40 foregoing). It is now necessary to consider more particularly what is meant by a balance sheet and what relation it bears to the accounting and bookkeeping of the concern. Essentially the balance sheet is a statement of assets and liabilities designed to show where the concern stands in relation to the rest of the world. When compared with former balance sheets,

it shows how the operations of the concern during a fiscal period have altered its position as compared with the position it occupied at the close of a preceding fiscal period. Obviously, then, the things which must be aimed at in a balance sheet are not only an accurate representation of assets and liabilities, but an accurate classification of such assets and liabilities in such a way as to throw them into groups comparable with one another, thus showing what the character of the assets and liabilities is, and how assets and liabilities of various descriptions correspond with one another. For instance it would not be enough to show that a concern had $100,000 of assets and $100,000 of liabilities. Neither would it be enough to show that the concern had assets of $100,000 and liabilities of $100,000, the latter being to the extent of $50,000 capital invested. The person who looked over the balance sheet would want to know of what things the assets consisted and what was the nature of the liabilities. Among the assets he would certainly want to discriminate between cash, real estate, plant, and bills receivable, and among liabilities he would want to discriminate between capital, bills payable, and other classes of possible demands. He would want to know whether the bills payable were short-time or long-time and what ones had either matured or were about to mature. As the business becomes more and more complex the necessity for very careful preparation of the balance sheet becomes more and more obvious.

What are Assets and Liabilities?

Some writers on accounting and bookkeeping consider it sufficient to say that the assets of a business are found in the debtor entries in its ledger accounts, while the liabilities are found in the creditor entries. That is to say, the accounts in which debit entries exceeded credit entries would be assets to the extent of such excess and, vice versa, the accounts where credit entries exceeded debits would be

liabilities to the extent of such excess. This rule is not complete or adequate, for in preparing a balance sheet from the ledger there will often be found a good many accounts that do not represent assets or liabilities as such but sources of expense or income. Mr. Dicksee suggests the following rules for determining in such cases whether an item is an asset or a liability:

(1) When an item is on the left-hand or debtor side of the ledger—
  (a) If the amount will eventually be received, it is an asset.
  (b) If the amount will not eventually be received, it is a loss.
(2) When an item is on the right-hand or creditor side of the ledger—
  (a) If the amount will eventually have to be paid, it is a liability.
  (b) If the amount will not eventually have to be paid, it is a gain.

As has previously been seen (see pp. 152, ff. foregoing), what are classified as gains and losses are carried to profit and loss, while assets and liabilities in the technical sense are not so transferred to profit and loss, but represent additions to the stock or decreases in the basic stock of wealth owned by the concern. We may illustrate this idea still further by considering the case of so-called "accrued" expenses. For instance, suppose that a business is drawing off a balance sheet to represent the condition of affairs on July 1 of a given year. We may assume for the sake of argument that its rent for the year is $500 and that by the terms of a special agreement such rent is not payable until the end of the calendar year or on December 31. Now this is not an immediate liability and nothing has been paid on it. The business, however, has occupied the building for six months, or in other words it owes, up to date, $250 to the owner of the building because it has occupied the place for that length of time and this amount is properly and proportionately chargeable. How would this be represented? We might open an account headed "Rent" as in foregoing illustrations. Now if it were possible to pay the rent for the half year and have done with it we should simply credit cash $250 and debit rent account "To cash for rent of half year ending June 30...$250." "Rent" would then be closed into profit and loss. But, by the terms of our

supposition, we do not pay out any cash. If, therefore, we want to represent the state of affairs on our books we must resort to a device for that purpose. Theoretically we might open an account with "Accrued Rent" which we would credit with the amount of the rent which had been incurred during the six months in question. To complete our double entry bookkeeping we might then open an account with "Rent" which we would debit with the occupancy of the building as "To use of building to June 30..$250." Then of course when the end of the year came and the accrued rent became due an entry would be made to cancel it. Cash would be credited and accrued rent debited "To Rent." Meanwhile in making out the balance sheet we should have two open accounts—one accrued rent with a credit surplus, the other rent with a debit surplus. Applying the test already suggested it will be seen that in the case of rent where the entry is on the left hand or debtor side, as the amount will not eventually be received but will eventually have to be paid, it is a loss. With accrued rent where the entry is on the credit side the amount will eventually be paid so that it is a liability. The effect of this then would be to carry the debtor entry in the rent account to the expense side of profit and loss while the credit entry in accrued rent account is a liability. The balance sheet when finally drawn off will show rent as a liability to the extent of $250 while profit and loss will show the amount due on the expense side as a loss, thereby cutting down the net profit exhibited by profit and loss and leaving a balance in cash account of $250 which increases the assets in hand to that extent and offsets the liability for rent which is exhibited among the liabilities as already indicated. Other methods of representing this transaction might be adopted but the principle would be the same throughout. The same idea might be applied in the case of other doubtful entries where it was uncertain how to class them—as resources or liabilities. The point upon which insistence is here placed, how-

COMPARATIVE STATEMENT.

Accounts	By the Books Dr.	By the Books Cr.	Solvency Facts Resource	Solvency Facts Liability	Revenue Facts Loss	Revenue Facts Gain	Balance Sheet Resources	Balance Sheet Liabilities
Cash	$ 5,500		$ 5,500				$ 5,500	
Real Estate	20,000		19,500		$ 500	$18,000	19,500	
Merchandise	17,000		35,000				35,000	
Expense	8,000		1,200		6,800		1,200	
Commission		$ 700	250	$ 100		950	250	
Interest	500				600			$ 100
Rent		300		200		100		200
Capital Stock		50,000		50,000				50,000
A	8,000	3,000	5,000				5,000	
B	8,000	3,000	5,000				5,000	
C		5,000		5,000				5,000
D		5,000		5,000				5,000
	$67,000	$67,000	$71,450	$60,300	$7,900	$19,050		
			60,300			7,900		
Net gain in "Profit and Loss"			$11.150			$11,150		
Dividends								5,000
Surplus								6,150
							$71,450	$71,450

The figures used in the foregoing statement are of course purely arbitrary. Since in closing the books at any point the allowances are entered and the loss and gain items are closed out to dividends and surplus, the obsolete valuations and the old revenue facts are removed from active standing and only those that pertain to the new year remain as balances. For instance in the illustration, $8,000 was spent last year on account of expense, but $1,200 of that is found now to be unconsumed (perhaps unexpired insurance, as no separate account is kept for insurance), and so $1,200 properly belonging to next year, though spent this year, is brought down as a balance for the new year to carry. Conversely, though $300 was collected for rent last year, only one-third of that has expired, and $200 of it belongs to next year. That amount is brought down as a balance to the credit of the new year. Since, moreover, the new year has been given that credit, it is responsible to supply the equivalent, and hence on the balance sheet this amount is a liability: to put this somewhat differently, since the old year turns over to the new all receipts (such as the balance of cash collected from that rent), the new year must be held accountable also for the equivalent—to supply the quarters or to refund the money.

See W. M. Cole's Accounts, p. 52, for statement on which the above is based, a few modifications being introduced for illustrative purposes.

Face P. 166.

ever, is that every account in the ledger may thus be analyzed and a conclusion arrived at as to whether its balance is an asset or a liability, a profit or a loss. The principle of double entry which has been followed throughout our discussion shows that if every debit footing is taken from the ledger and arranged in a column for that purpose and if the same is done with every credit footing, the two sides will total the same. Such an arrangement is called a trial balance and the same term is applied to a listing of debtor and creditor balances as shown by the various accounts—which of course works out in the same way, that is, both columns, debtor and creditor, are equal. This is the first step toward ascertaining whether the work is correct and toward closing up the books as has already been seen. (See p. 36 foregoing.)

Preparing the Balance Sheet.

The question of preparing the balance sheet can now be considered. It has been made plain that whereas profit, gain or income accounts are closed into profit and loss, loss, expense or outlay accounts are also closed into profit and loss on the debit side. Plainly, then, profit and loss is a summarized and balanced statement of certain accounts which now figure in the trial balance. Suppose that profit and loss is written up in the way already indicated (see p. 37 foregoing) by transferring the loss or outlay balances to debit side of profit and loss, the income or gain balances to the credit side, and striking a balance between them. This means that all of the accounts thus grouped have been sifted out from the complete statement of balances shown in the trial balance. The complete balance sheet will be made up by listing all the assets and all the liabilities growing out of or represented in the accounts which have not been closed into profit and loss, and then taking the balance shown in profit and loss and entering it either as a net profit or as a loss as the case might be, it being of course a

liability to owners or proprietors the same as capital when it is a profit, and an asset when the balance shows a loss. Profit and loss account of course is closed into capital account and, this having been done, the net profit appears in conjunction with capital as a liability. The difference between assets and liabilities before capital account has been written up from profit and loss is the net capital—that is, the capital originally shown plus such addition as may have been made to it owing to the operations of the year. If the difference between assets and liabilities is equal to the amount shown in capital account by writing up that account from profit and loss, the work of bookkeeping has presumably been correctly performed. It thus appears that the balance sheet is a statement (in complete form) of the ledger balances, supposing everything to be recorded there, including both accrued and realized items but omitting the purely expense and income items which have been balanced against one another, the surplus or deficit being carried to capital account and thus appearing there as a net addition to or deduction from capital. What is meant by this statement may be illustrated in compact form by taking a statement in which is exhibited in parallel columns the trial balance, inventory, profit and loss, and balance sheet as they stand related to one another. In order to make out such a typical statement we may suppose the existence of two concerns, A and B, which owe the business and two others, C and D, to which the business is in debt—both on open accounts. Then taking the regular typical accounts such as bills payable and receivable, goods, rent, wages, cash, capital, etc., we may state the items appearing in the different columns as shown herewith.

To summarize what has thus been said of the balance sheet in general, we may repeat the definition furnished by Mr. George Lisle to the effect that "The balance sheet may . . . be defined as a statement of the liabilities

of a concern (credit balances as taken from the ledger) including the capital, reserve, and unappropriated profit, on the one side, and the assets of the concern (debit balances as taken from the ledger) including any deficiency, on the other. It thus appears that the real difference between the profit and loss account and the balance sheet is that whereas the former is intended to show the course of developments during a given period, the balance sheet shows the exact position at a given moment."

Form of Balance Sheet.

While in a small business it may be proper and desirable to list practically all the assets and all the liabilities upon the balance sheet, this becomes neither practicable nor desirable as soon as the business is somewhat developed. When it is seen to be impossible to list all the assets and liabilities separately by reason of the fact that they are so numerous, the question arises how the assets and liabilities should be presented—that is to say, how they should be grouped for the purpose of convenient combination so as to show what the concern has actually been doing, in an abbreviated form. In the small business, the listing will usually discriminate simply between such items as "open" or "personal" accounts which will be presented as a lump sum, showing what is due upon open account to the business—cash in hand and in bank, bills receivable, goods on hand, and real estate—on the assets side. On the liabilities side, it will distinguish between the open accounts which are payable to others, presenting what the firm owes to individuals or corporations, the amount of bills payable which the firm has outstanding, its liability for the capital put in by stockholders and for profits also payable to stockholders. Such groupings are sufficiently simple, and depend merely upon a recognition of the distinction between different kinds of property. A difficulty, however, is encountered as soon as the

business becomes more complex and as soon as questions of accrued assets and liabilities have to be taken into account. Then the questions both of classification and of arrangement arise. In the case of accrued assets, for example, such as interest which is due but has not been paid or of accrued liabilities such as interest ultimately due to others but not yet payable, the question of correct representation may be difficult. The balance sheet should be made up from the ledger and if that be done, it cannot be more inclusive or more truthful than the ledger. It is limited to the accounting set forth in the ledger. Unless accrued assets and liabilities are shown in the ledger they cannot properly appear in the balance sheet, except perhaps as a subsequent notation or memorandum indicating what the concern knows it is liable for or has coming due to it. So with depreciation, it will be difficult to represent properly the status of the capital assets unless a due allowance has been made in the accounting scheme for depreciation, so that the results as there duly set forth can be taken up on the balance sheet. Supposing that due allowance has been made, however, for these various elements affecting the position of the concern in the accounting, the balance sheet will be merely a representation of them. It is worth noting at this point that, according to the accounting treatment which is adopted in the ledger, given items may appear either on one side or on the other. Depreciation, for example, may be found in the balance sheet as an asset. This will be the case in the event that a given sum of money has simply been set aside or invested for the purpose of offsetting depreciation in plant, real estate, fixtures, etc., or it may appear both on the assets and liabilities sides as will be the case in the event that the fund set aside is invested as a safeguard without correspondingly reducing the book value of the assets, so that it is considered necessary to represent a liability therefor on the liabilities side in the form

of surplus, this being practically analogous to an addition to capital. Or depreciation may simply appear as a liability, as will be the case if a given sum is written off from the net profit and set aside for the purpose of offsetting the wasting of assets without dissociating this fund from other assets, it being left simply as an element of wealth in the hands of the business itself. The same thing is likewise true of other funds of the same kind, such as funds set aside for insurance and the like. It may be said then that the precise form of the balance sheet—that is to say, the actual elements counted as assets or liabilities, the inclusiveness of the sheet, its accuracy, etc., depends almost entirely upon the system of accounting that has been pursued.*

Grouping the Items.

But when the actual items of assets and liabilities have been designated in the way referred to, there still remains the question of grouping them. This grouping may follow any one of a number of different methods. The one generally preferred is the so-called "standard form of balance sheet" which Mr. Dickinson† has described as follows: "The standard form of balance sheet . . . divides the assets into three classes, namely: Capital, representing the fixed investment in the property; current, representing the assets which are being turned over and converted into a different form day by day; and deferred, representing expenses incurred in advance for some succeeding period; and to these three is frequently added a fourth representing the assets held for special funds, which may have been set aside out of profits or otherwise for specific purposes. On the liabilities side a similar classification prevails, viz: Capital liabilities, representing the capital stock and funded debt which have been contrib-

* See citation from Mr. Cole, given on p. 94 foregoing.
† Accounting Practice and Procedure, p. 16.

uted and remain fixed, at any rate for a number of years; current liabilities, including floating debt, which have to be paid off in the ordinary course of business from day to day; special funds set aside for various purposes, such as depreciation, sinking fund, etc.; and, finally, surplus or profit and loss account, representing the accumulation of undistributed profits. This form is that most commonly adopted here, each of the principal headings being again divided into such sub-accounts as may be desired." This may be illustrated by representing in outline a standard form of railroad balance sheet in the shape presented by Mr. Cole* as follows:

FORM OF RAILROAD BALANCE SHEET.

Capital Assets—		Capital Liabilities—	
Cost of road,		Capital stock,	
Stocks and bonds,		Funded debt,	
Sinking fund,		Sinking fund,	
Available Assets—		Current Liabilities—	
Accounts receivable,		Bills payable,	
Due from other roads,		Accounts payable,	
Supplies,		Due other roads,	
Cash,		Claims audited,	
Accrued Assets—		Accrued Liabilities—	
Interest,		Rentals,	
		Interest,	
		Profit and Loss,	
Contingent Assets—		Contingent Liabilities—	
Suspense Account,		Guaranteed bonds of subsidiary roads,	

This division of the balance sheet is not that which is adopted in England, where accounting practice is carefully regulated by law and where the standard form of balance sheet is entirely different in certain respects from that which has been indicated above. In the English form each class of asset is set forth by itself in the balance sheet in an order which is supposed to follow the ease of liquidation. Thus the fixed assets are stated first, then those which are more easily realizable follow in their order, while

* Accounts, p. 177.

cash comes last. So, on the liabilities side, the liabilities that are most remote in their character, such as capital, are stated first and are then followed by the others in the order of immediateness, those last mentioned being the ones that are payable at once. There is no special object to be gained in discussing the relative values of these various kinds of balance sheet. The important thing is to have the balance sheet arranged upon a definite principle with the various groups in accordance therewith. For ease of convenience in quickly understanding the position of the concern from the standpoint of immediate solvency, the English form is probably the more desirable of the two forms just indicated, while from the standpoint of ultimate analysis the American form may in some respects be preferable. It is worth while to note in this connection the form of statement which is prescribed for national banks reporting to the United States Government. This is the outcome of very careful legislation and of years of experience with a particular class of institutions whose business has been carefully studied and is susceptible of very close analysis. The form of Assets and Liabilities Statement adopted by the Government and made compulsory upon the national banks, is shown on page 172.

Examination of this statement of resources and liabilities shows that in a rough general way the order of liquidity is followed in the statement. For example, under the head of liabilities the capital items—capital, surplus and undivided profits—are first mentioned. Then are enumerated the demand liabilities mentioning first the bank notes outstanding, then the sums due to national and state banks, trust companies, etc., the sums payable on sight as dividends already declared, and then the deposits of various kinds. Up to this point, the order of arrangement has distinctly been that of the relative immediateness of the liability involved by the different items. At the end of the classification are given several captions which have

NATIONAL BANK STATEMENT.

Resources.			Liabilities.		
Loans and discounts.....			Capital stock paid in.....		
Overdrafts			Surplus fund		
U. S. Bonds to secure circulation			Undivided profits, less expenses and taxes		
U. S. Bonds to secure U. S. deposits			National-bank notes outstanding		
Other bonds to secure U. S. deposits			State-bank notes outstanding		
U. S. Bonds on hand....			Due to national banks (not reserve agents)...		
Premiums on U. S. Bonds			Due to state banks and bankers		
Bonds, securities, etc.....			Due to trust companies and savings banks.....		
Banking house, furniture, and fixtures			Due to approved reserve agents		
Other real estate owned..			Dividends unpaid		
Due from national banks (not reserve agents)...			Individual deposits		
Due from state banks and bankers, trust companies, etc.			U. S. deposits		
Due from approved reserve agents			Deposits of U. S. disbursing officers		
Checks and other cash items			Bonds borrowed		
Exchanges for clearing house			Notes and bills rediscounted		
Bills of other national banks			Bills payable		
Fractional currency, nickels, and cents			Reserved for taxes		
Specie			Liabilities other than those above stated.....		
Legal-tender notes					
Five per cent redemption fund					
Due from Treasurer U. S. other than 5 per cent fund					
Total			Total		

been placed last notwithstanding that they do not represent immediately maturing liabilities. On the resources or assets side, is found the same general order of grouping, the classification followed being in the main that of immediateness of realization or availability, although there are one or two violations in this order of statement as is seen in the entering of banking house and real estate lower down in the assets column than the securities owned. This, however, is for a special reason connected with the arrange-

ment of the national bank report which need not be considered here.

Interpretation of Balance Sheet.

From what has been said it will be inferred that the balance sheet is the essential guide of the individual who wishes to form a general idea of the condition of the business at any moment. We have indicated some of the main considerations governing the correct statement of the condition of a business upon the balance sheet. It should be remembered, however, that, as already stated, the balance sheet is intended to represent the condition existing at any particular moment, while the profit and loss account shows the process by which the existing condition has been arrived at. It is frequently more important for the prospective buyer of a business or of a part of it to know what the general direction of the business has been over a period of past time than to know exactly what condition it is in at the moment. Of course he wants to know the latter, but no matter how sound the assets may be the buyer will not want to take them over unless he thinks there is a probability that they will increase in value or that he will have an opportunity of making profits. He cannot correctly interpret the balance sheet, therefore, if he has only one. He must have that for the last preceding fiscal period and perhaps others for earlier periods. With these he is in a position to make a comparison of the tendencies of the business over a series of past years and to form his own idea of the reasons which have put the concern into its existing position. The basis of such an interpretation, however, will have to be an exact comparability between the classifications of the balance sheet. Uniformity in the methods of making up the sheet must therefore be maintained, and there can be no question as to the items which go to make up a given grouping of assets or liabilities if an accurate comparison is to be insti-

tuted. In cases where a necessary regrouping of items has occurred, this can be tolerated only upon condition that there is a most careful explanation of the reason for it and the effect it has had in changing the showing made in the sheet. Otherwise comparisons designed to show the growth of business are without foundation. Supposing, however, that uniformity has thus been observed, the question of judging of the balance sheet and what it shows still remains, and is to the investor and business man a most important matter. It should be stated, however, that the considerations which must govern, in judging the balance sheet and its meaning, are largely those of business experience and are not primarily those of accounting. The judging of the balance sheet, however, must be conducted upon fundamental principles of accounting which apply to all balance sheets.

This process of interpretation is essentially that of estimating whether the business has passed through a process of normal growth and development or whether its history presents features of abnormal expansion or of abnormal under-development. While, as above remarked, every particular class of business has its own criteria for judging of these matters, certain basic propositions of accounting apply. First of all, the student of the balance sheet wants to know whether the concern is making a normal profit. His balance sheet, if correctly made up, shows him the total capital engaged in the business, whether this be in the form of an actual investment originally made with the use of the capital funds contributed at the start or whether it be in the form of subsequent additions to capital put in out of profits. It shows, of course, whether the business has more capital stock outstanding than what corresponds to the actual worth of its capital assets, or whether it is under-capitalized by reason of the fact that capital assets exceed in value the nominal amount of capital stock outstanding. All of this depends upon whether

correct valuations have or have not been made, but, assuming these to have been made in the first place, the materials for judgment are afforded as indicated. The balance sheet will also show whether the concern has been working too largely upon a credit basis. It will show this through the bills receivable and payable accounts as compared with cash in bank. A knowledge of practice in the particular branch of business which is under consideration affords the basis for judging whether the line of credit extended and obtained is too great and whether therefore bad judgment has been shown in not getting to a more nearly cash payment basis. From a complete balance sheet, an idea of the rate of turn-over of capital can be obtained, and this will give some light upon the question whether the volume of business is such as to warrant the making of better profits in the future under a more skilled management, or whether the existing management has done as well as could have been expected with the given turn-over of capital. The same considerations will also throw light upon the question whether too large a volume of fixed assets is or is not employed, considering the nature of the business. All of these elements in the problem of judging the balance sheet are dependent upon knowledge of the business, as well as correct statement of the accounting situation, but the latter is essential to the exercise of the business knowledge referred to.

Capital and Revenue Items.

In making a judgment of the kind already referred to in the case of any business which employs a large fixed capital, decided difficulty is, however, encountered by reason of the fact that it is not easy for the reader of the balance sheet to form an idea exactly how far the expenditures of the concern (and its incomes as well) are due to capital and how far to revenue. At an earlier point (see p. 95 foregoing) reference has been made to some diffi-

culties in deciding initially whether a given expenditure has been made for the purpose of increasing capital or whether it has been made for the mere purpose of maintaining it or repairing the results of accident or immediate wear and tear. It is much harder in the case of the balance sheet to form an opinion on this subject and, therefore, in some cases it is deemed best to adopt what is called the "double account system," the object of which is that of segregating items of income and expenditure relating to capital and items of income and expenditure relating distinctly to income or profit. The principle of the double account form of balance sheet may be briefly described. The object in view is to show how much capital has been originally obtained from the stockholders or partners, how much has been put into fixed forms or capital assets, how much has been retained as floating capital for the purpose of running the plant and thereby making a profit. In other words it is endeavored to discriminate between the amount actually tied up in a plant and the amount kept in a fluid form for the purpose of carrying on business in the narrow sense of the term. In conducting the concern the effort is made in every case to discriminate carefully between classes of receipts recognizing all funds received from stockholders, bondholders, etc., as capital receipts, and crediting them to capital account, while other receipts are those that come in the course of the operation of the business and are the fund from which net profits are to be withdrawn after deduction of running expenses has been made. So also it is sought to discriminate carefully between expenditures on capital account and expenditures on running account. The outlays on capital account are those which are made by expending the cash capital for actual fixed forms of assets, such as machinery, plant, etc. Outlays on running expenses, salaries, repairs, etc., are revenue expenditures and as such go to profit and loss account (see p. 163 foregoing for statement of principles

upon which to discriminate between assets and liabilities, losses and gains). It is clear from what has been said that in managing the accounts in the way just indicated it is desirable to refrain from "writing down" or "writing off" the assets for the period and to state everything at the original cost value. In order to provide for depreciation, profit and loss will be debited with the amount that it has been determined to set aside and depreciation fund account will be credited. In this case depreciation fund will appear as a liability on the general balance sheet because it will eventually have to be paid out for the purpose of improving the capital assets so as to restore them to their original position or else they will be augmented by the addition of other assets whose cost value is supposed to equal the loss on depreciation. Suppose a concern which intends to present its affairs on the double account system allows a certain depreciation for the operations of the first year, it can then in starting its accounting for the second year write off the assets to the extent of the amount allowed for depreciation, either holding special investments obtained by the use of the depreciation allowance or else it can increase the amount of the capital assets by expending thereon the sum set aside for depreciation, making the corresponding reduction or writing off the book value of the assets. This double account system is essentially merely a different way of presenting the operations of the concern in the balance sheet and may be illustrated by a sample form showing the difference between double and single statement based upon one furnished by Mr. Dicksee when discussing the subject as affected by the English companies' act.* The statement is exhibited in modified form on the following page.

* Bookkeeping for Accountant Students, pp. 246-9.

Single Account System.
THE A. B. COMPANY.
Balance Sheet June 30, 1910.

Assets.		Liabilities.	
Plant, machinery, leases, etc., as per last statement.....		Par value of capital,	
Extensions to date.......		Capital paid up,	
		Preferred stock,	
Less depreciation		Common stock,	
Stock on hand..............		Bonds,	
Investments		Reserve Fund,	
Accounts receivable		Current Liabilities,	
Cash in bank and in hand....		Bills payable,	
		Accounts payable,	
		Profit and loss account,	

Double Account System.

THE A. B. COMPANY.

Capital Account for Year Ended June 30, 1910.

Dr. Cr.

	Expenditure to June 30, 1909.	Expended June 30, 1909-June 30, 1910.	Total to June 30, 1910.		Receipts to June 30, 1909.	Received June 30, 1909-June 30, 1910.	Total Receipts to June 30, 1910.
To Leases,				By Preferred Stock,			
" Real Estate,				" Common Stock,			
" Machinery,				" Bonds,			
" Balance of Capital Account,							

General Balance Sheet, June 30, 1910.

Assets.		Liabilities.	
Stock on Hand,		Capital Account balance,	
Investments,		Reserve Fund,	
Accounts Rec'ble,		Depreciation Fund,	
Cash in bank and in hand,		Current Liabilities,	
		Bills payable,	
		Accounts payable,	
		Profit and Loss Account,	

There is also submitted a sample of the regular railway balance sheet required of American railroads by the Interstate Commerce Commission and following in some respects the same line as that which has been made compulsory for use by certain classes of concerns under the English companies' act as above stated (see p. 176). It is clear that where but little fixed capital is employed, the adoption of the double account system is not at all necessary or perhaps desirable. The English companies' acts make it compulsory for certain classes of railroad and street railway companies and for certain classes of gas companies. In general, however, it is a suitable way of presenting the facts in the case of all concerns which have the larger part of their capital invested in permanent or fixed assets. This would include public service corporations of many kinds, including railways, gas, water, electric light, telegraph and telephone companies, and in addition it would include analogous concerns of a private character such as mining businesses and others having a very large fixed capital investment subject to depreciation. The element of depreciation becomes less and less important and the change in the value of capital assets less and less significant as a larger and larger proportion of the capital is used in floating form. For example, in the case of the bank or financial institution there is no field for the use of such a system of accounting as has just been referred to, because there, there is no substantial investment in material assets, the capital being employed in the purchase and realization of commercial paper, securities, etc.

Form of General Balance Sheet Statement.

ASSETS.

Property owned as investment:
- I. Physical Property Owned—
  - 1-A. Road and Equipment to June 30, 1907—
    - (*a*) Road.
    - (*b*) Equipment.
  - 1-B. Road and Equipment since June 30, 1907—
    - (*a*) Road.
    - (*b*) Equipment.
    - (*c*) General Expenditures.

II. Securities Owned—
  2. Securities of Proprietary, Affiliated, and Controlled Companies—Pledged—
    (a) Stocks.
    (b) Funded Debt.
    (c) Miscellaneous.
  3. Securities Issued or Assumed—Pledged—
    (a) Stocks.
    (b) Funded Debt.
    (c) Miscellaneous.
  4. Securities of Proprietary, Affiliated, and Controlled Companies—Unpledged—
    (a) Stocks.
    (b) Funded Debt.
    (c) Miscellaneous.

III. Investments—
  5. Advances to Proprietary, Affiliated, and Controlled Companies for Construction, Equipment, and Betterments.
  6. Other Permanent Investments—
    (a) Physical Property.
    (b) Securities.

Working Assets:
  7. Cash.
  8. Marketable Securities—
    A. Securities Issued or Assumed—Unpledged—
      (a) Stocks.
      (b) Funded Debt.
      (c) Miscellaneous.
    B. Other Marketable Securities—
      (a) Stocks.
      (b) Funded Debt.
      (c) Miscellaneous.
  9. Loans and Bills Receivable.
  10. Net Traffic, Car Mileage, and Per Diem Balance.
  11. Net Balance Due from Agents and Conductors.
  12. Miscellaneous Accounts Receivable.
  13. Materials and Supplies.
  14. Other Working Assets.

Deferred Debit Items:
  15. Advances—
    (a) Advances to Proprietary, Affiliated, and Controlled Companies.
    (b) Working Funds.
    (c) Other Advances.
  16. Insurance Premiums Paid in Advance.
  17. Taxes Paid in Advance.
  18. Discount on Securities Issued—
    (a) Discount on Stock.
    (b) Discount on Funded Debt.
  19. Property Abandoned, Chargeable to Operating Expenses.
  20. Cash and Securities in Sinking and Redemption Funds.
  21. Cash and Securities in Insurance and Other Special Funds.
  22. Cash and Securities in Special Trust Funds.
  23. Items in Suspense.

Deficit:
  24. Profit and Loss—Balance.

LIABILITIES.

Stock:
  25. Capital Stock—
    (a) Common Stock.
    (b) Preferred Stock.
    (c) Debenture Stock.
  26. Receipts Outstanding for Capital Stock.

27. Stock Liability for Conversion of Outstanding Securities of Constituent Companies.
28. Premium Realized on Capital Stock Sold.

Mortgage, Bonded, and Secured Debt:

29. Funded Debt—
    (a) Mortgage Bonds.
    (b) Collateral Trust Bonds.
    (c) Plain Bonds, Debentures, and Notes.
    (d) Income Bonds.
    (e) Equipment Trust Obligations.
    (f) Miscellaneous Funded Obligations.
30. Receipts Outstanding for Funded Debt.
31. Premium Realized on Funded Debt Sold.
32. Receivers' Certificates.
33. Obligations for Advances Received for Construction, Equipment, and Betterments.

Working Liabilities:

34. Loans and Bills Payable.
35. Net Traffic, Car Mileage, and Per Diem Balance.
36. Audited Vouchers and Wages Unpaid.
37. Miscellaneous Accounts Payable.
38. Matured Dividends, Interest, and Rents Unpaid.
39. Matured Mortgage, Bonded, and Secured Debt Unpaid.
40. Working Advances Due to Other Companies.
41. Other Working Liabilities.

Accrued Liabilities Not Due:

42. Dividends Declared and Interest and Rents Accrued, Not Due.
43. Taxes Accrued.

Deferred Credit Items:

44. Operating Reserves—
    (a) Reserves for Replacement of Property.
    (b) Reserves for Other Purposes.
45. Liability on Account of Special Trust Funds.
46. Items in Suspense.

Appropriated Surplus:

47. Surplus Reserves—
    (a) Reserves Invested in Sinking and Redemption Funds.
    (b) Reserves Invested in Insurance and Other Special Funds.
    (c) Reserves Not Specifically Invested.
48. Additions to Property through Income since June 30, 1907.

Free Surplus:

49. Profit and Loss—Balance.

Statement of Affairs.

The term "balance sheet" is usually applied to a statement of the kind already described relating to the affairs of a solvent company. Supposing, however, that a concern is insolvent or bankrupt, the question of representing its position to the creditors and others arises, and then the problem must be faced whether all that is needed is a plain balance sheet or not. In such a case, it is probable that more details are wanted than those that are afforded by the balance sheet. It is customary, for such conditions,

to draw up what is called a "statement of affairs." This statement of affairs lists the liabilities in substantially the same way as would be done on a balance sheet except that now the effort is to indicate also the relative values of the liabilities and the relative degrees of their urgency. It may be shown, for example, whether they are actual liabilities or only contingent, whether they are specially secured or simply "general creditors." So also with the assets the listing will endeavor to show whether they are to be classed as unquestionably realizable or doubtful and to indicate whether they are subject to special claims which will reduce their worth or not. The fixed assets will be shown valued upon a basis supposed to indicate what can actually be realized for the purpose of meeting liabilities. It is clear that in such a statement two classes of knowledge are called for which may or may not be furnished by the accounting system but which probably will not be. These are (1) the character of the liabilities from the legal standpoint—whether preferred or not, and (2) the probable actual value of the assets at immediate sale or disposition. In this case the values assigned to the assets are likely to vary more or less from those which are represented on the books. Moreover, the arrangement of the statement of affairs is different from that likely to be adopted in the balance sheet since it will now be sought to show the amounts of the assets and liabilities respectively in their relative rank. A sample of such a statement of affairs patterned after that furnished as an illustration by Mr. George Lisle* is herewith submitted. (p.183.)

The statement of affairs is thus seen to be a variety of balance sheet, differing from the ordinary type of sheet simply in details, the changes being made because of its special uses in showing the realizable value of assets against specified liabilities. In English accounting it is customary to supplement such a statement of affairs by drawing up

* Accounting in Theory and Practice.

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Statement of Affairs, Dec. 31, 1910.

Assets.		Cost or Book Value.	Estimated Yield.	Liabilities.		Gross Liabilities.	Expected to Require.
Cash .... On hand .... In bank				Unsecured Creditors Open accounts ... Loans			
Goods— Customers Accts., Good .... Doubtful .... Bad				Creditors fully secured by mortgage, deducted from assets,			
Machinery, Fixtures, etc. .... Real Estate, Valued at, Less Mortgage,				Creditors Partially secured, Deduct Investments Assigned to Creditors			
Investments assigned to creditors and deducted from liabilities,				Contingent Liability for paper discounted, etc.,			
Deduct. Preferred Creditors' Claims, Assets Available for Division, Among unsecured Creditors .... Deficiency of assets,				Preferred Claims, Taxes, Wages, Rent, Deducted from Assets,			

what is called a "deficiency account." The deficiency account is intended to show the summarized results which are generally indicated in the statement of affairs. The credit entries are those which usually appear in capital

account—the original capital and the subsequent profits realized in succeeding fiscal periods. In addition to these, is credited the deficiency or shortage which the statement of affairs shows to exist. The debit entries show the various elements of loss, such as shrinkage in the value of assets, the cash drawn out (in the case of a partnership or an individual business), etc. In other words the deficiency account shows the original capital put in and the amount subsequently added through clear profit, while it also shows where this capital has gone, that is, how it has been disposed of. The two sides are balanced by an entry giving the deficiency or shortage as already indicated. A sample of such an account based upon and drawn from the statement of affairs already supplied is herewith furnished.

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Dr. Deficiency Account. Cr.

Dr.		Cr.	
To loss from shrinkage in value of Assets as shown by statement of affairs: Goods, Customers' Accounts, Real Estate, Machinery, Fixtures, etc., Investments,		By deficiency as shown in statement of affairs, " capital originally contributed, " profit shown by books, First year, Second year, Third year,	
To loss by Contingent Liabilities, " Cash drawn: First year Second year, Third year,			

XII. AUDITING AND REPORTING.

Object of an Audit.

In the earlier part of this volume it was pointed out that the accountant as such performs his service, not as

a bookkeeper but as a deviser of systems of accounting—that is, for recording business facts. The function of the bookkeeper was there explained as being that of setting down or recording the facts relating to the business as they developed from day to day following out the system which the accountant had devised and put into operation. It was noted that in many cases, the bookkeeper may also be the accountant inasmuch as it may fall to him to devise the system of accounting in the first place or to make innovations in it from time to time as well as to record or to oversee the recording of the daily developments. A different kind of duty, however, falls to the accountant—and probably more frequently than does that of originating a system of accounting. This is what is known as "auditing." By auditing is meant a process of ascertaining (1) whether a given set of accounts or system of accounting has been correctly carried out in a formal way—that is to say, whether the entries have been correctly made and the work carried on without fraud; and (2) whether the system of accounts was devised originally in such a way as to furnish the information that is needed in order to give a correct idea of the business or whether it was so crudely framed as not to afford an accurate notion of what has actually been done. Both of these duties fall to the accountant and in performing them he is designated as an "auditor." The duty of auditing accounts is highly important both from the legal and commercial standpoints, and the necessity of having some supervisory authority to certify to the results of the accounting is clearly recognized by most large concerns at the present time. Moreover, the duty of auditing accounts is now recognized by both the Federal and state governments in connection with the performance of their work in overseeing the operations of various public service companies. Thus the Federal Government directs the accounts of national banks, railways, etc., while the state governments

direct those of state banks, trust companies, insurance companies, and various others, and not a few municipalities do the same with respect to municipal public service corporations. The accountant, when called in for consultation by a commercial concern, may be asked to audit the books of the concern merely to assure the managers that everything has been correctly done in a mechanical way or to detect fraud which is supposed to exist there, or he may be called in not because the concern thinks there has been fraud or error but because it knows there has not and it wants the accountant to certify to the facts in the case. Such certification is growing more and more necessary as an element in the granting of commercial credit. Banks and other financial institutions, before granting a loan, ask for a statement or audit carried on by a certified public accountant in order that they may be assured that the business is in exactly the position it claims to be. If a favorable showing is made the bank will feel safe in making a loan to the concern; otherwise not. Thus the function of auditing has a most important financial side. So also, an executor or trustee may ask to have his accounts audited, or may be required to have them audited prior to his being released from the responsibilities of his office. In all these ways, auditing involves the practical application of the principles of accountancy and has its relations to commerce, finance, and legal control.

Checking the Accounts.

As we have seen, the primary function of the audit is simply that of ascertaining that the system of accounts originally prescribed or embarked upon has been lived up to and carried out on the basis and with the intent originally adopted. This evidently involves two kinds of work—(1) the examination of the entries to make sure that they are correct, and (2) the examination of the other data available to show that the entries were warranted—that

is to say, to show that the transactions represented actually occurred. The latter point may be considered first. This essentially consists in a checking over of the plant, property, etc., to see that it is as stated. Vouchers for payments made, contracts showing what the concern is engaged upon, commercial paper showing the nature of its investments, checks evidencing the making of payments, may be examined and verified. In the examination of a bank, for instance, the examiner will go through the cash to see that it is as claimed, will glance through the commercial paper to see that that is as stated, and will probably communicate with the correspondents of the bank (other banks) in order to ascertain from them the amount standing upon their books to the credit of the bank which he is examining. In the case of the business firm, he may look over the plant in a general way, or if very careful work is needed he may secure the services of an expert who does this for him and certifies the items, values, etc. In the case of the ordinary business firm, the auditor will want to assure himself that the cash on hand and in bank is as represented and that the assets or goods on hand are as indicated and that bills payable and receivable are as stated. Supposing that everything is correct in the way of vouchers, property on hand, commercial paper, etc., the auditor's duty in checking up the accounts may be considered. From this it is not to be inferred that the vouchers and other documents are examined and verified first, before checking up the books, although they may be, or the verification may be made in connection with the examination of the books. When, however, the task of checking up is begun, the auditor cannot of course go through all of the entries to see item by item that the several entries are correct. He will endeavor to make sure fundamentally that the bank book (written up by the bank) corresponds with the bank account as given in the ledger, and that the cash book corresponds as nearly as can be

ascertained with the bank showing, or where cash has been paid out on voucher that it corresponds with the vouchers available. He will endeavor to ascertain whether the subordinate books such as invoice book, day book, etc., correspond with the entries in ledger accounts, testing sample entries and verifying the accounts showing fixed assets and goods so far as possible by comparison with the subordinate books. Profit and loss account will be examined with particular care and each item in it checked back through the various accounts in which it figures. The same will be done with the balance sheet, in order to make sure that that is likewise as represented. If this has been done and if the principal outlay accounts, such as wages, etc., have been tested by comparing the entries with the subordinate and original records on which they depend, the auditor will probably have been able to form a tolerably correct idea of the records of the business as such. Just how thorough this part of the examination should or must be is not a matter which can be expressly stated. It is a matter for agreement between the parties to the audit, and the degree of thoroughness to be had in checking up the mere mechanical records of the business will depend very much upon the extent to which the auditor is given time, either personally or through others, to test the various records. Although he can ascertain in the ways just indicated the general correctness of the records it is entirely possible for a skilful man to commit frauds and to cover them up by fraudulent entries which the auditor cannot ordinarily detect except by going over the work in great detail. For example, the personal ledger of a large concern or the depositors' ledger of a bank may be made the medium of a fraud which is practically impossible of detection in the ordinary audit. If A is a depositor at bank I and brings $100 in funds to the bank, the teller who receives it will enter it in his pass book as $100. The depositor will look at the entry and go away

satisfied. If the teller wishes to defraud, he may enter the customer's account with $50 only, making the corresponding entry in cash and keeping the extra $50. If the customer is keeping a substantial balance at the bank this may be perfectly safe from the immediate standpoint. The auditor, going over the books, will have no way of knowing that this is not a correct entry even if he should go through the depositors' ledger. He could assure himself only by calling in the pass books and comparing them with the accounts—a process rarely resorted to. The frequency of bank frauds shows that the auditing process by no means always attains the end of detecting fraud and the same is true in other classes of business. Such frauds, however, are likely to be uncovered at almost any time through some circumstance that is not foreseen and that arouses the auditor's suspicions as to the correctness of the work he has been asked to supervise. Regularity in audits, therefore, tends strongly to the avoidance of fraud.

Protection Against Fraud.

With a view to protecting itself against fraud the well-organized firm usually adopts certain safeguards or regulations regarding the conduct of its accounting. The auditors when going over the accounts naturally become familiar, early in the process, with the nature of such safeguards and are thereby saved from the necessity of doing work designed to test matters that have already been sufficiently taken care of through the office regulations. Some of the obvious rules that are ordinarily adopted for the sake of protecting the concern and facilitating audits are those of (1) making complete separation between the keeping and handling of the cash and the conduct of the personal accounts and ledgers; (2) the regular payment into the bank of all cash each day and the making of payments to creditors by check only; (3) the requiring of actual vouchers for all cash payments not made by check;

(4) the adoption of some system for certifying the correctness of invoices representing goods shipped; and (5) the frequent changing of employes in charge of various branches of the work in order that each man may have an opportunity of testing or observing the work of other men and may be deprived of the opportunity of committing fraud and covering it up by continuous bookkeeping entries designed for that purpose either individually or jointly with others. While of course the fact that such precautions have been taken and that, so far as possible, the business itself has protected itself against fraud will tend to reassure the mind of the examiner of accounts who is called in, the mere superficial existence of the desirable regulations does not mean that they have been lived up to. Also the auditor may observe conditions which will in his judgment make it necessary for him to disregard the regulations thus apparently set in force and to conduct his examination with exactly the same degree of thoroughness that he would have employed had he not been informed of the existence of the system of protection in the office. In fact, as a rule, the auditor will find it desirable to assure himself that such a system of protection has really been kept in rigid operation, since in many places the fact that the system exists will be regarded by careless managers as exempting them from the necessity of exercising the same care that they otherwise would have taken. Where a system for the prevention of fraud has, however, been in operation along the lines already indicated, it is not a difficult matter for the auditor to see whether it has in the main been effectively applied or not. In order to guard against the danger of fraud in connection with the audit itself, the auditor should not allow the mechanical operations of testing the accounts to be carried on by the employes who have been responsible for them. This point is not always observed, particularly in connection with the auditing of the accounts of corpora-

tions which are subject to public control and where the mere mechanical labor of going through the books is great. In the case of the national bank examinations, for example, it has frequently been found that the examiner was in the habit of calling upon the clerks themselves to make out statements concerning their own operations. Of course this gave them the chance, which in some cases was availed of, to protect themselves by providing against the recognition of their errors, furnishing such figures to the auditor or examiner as were necessary for their own purposes.

Responsibilities of Auditor.

The responsibilities of an auditor may be said to be both legal and commercial. Under the English companies' act, as well as under the decisions of the English courts, the functions of the auditor have been very carefully defined from the legal standpoint and his responsibilities have been marked out. Somewhat the same has been done by legislation in the United States. An auditor's certificate that he has examined the books and accounts of the concern and has found its balance sheet to be accurate is accepted as a definite assurance that all is correct and on this depends his professional reputation. A wilful certification to what he knows to be untrue may be disastrous to innocent investors, creditors or others and where it can be proved is of course an act subject to severe punishment on the ground of fraud. In some English cases where the auditor has been found to be guilty of negligence, he has been held jointly liable with the directors for moneys lost or improperly paid as the result of such negligence. The auditor may have no property that is sufficient to meet the liability thus incurred, which may be very large, and the point may thus be of academic rather than of practical interest. The professional reputation of the well-established accountant, however, being at stake whenever he

makes an audit, there is sufficient inducement to warrant his doing what he can to secure a correct showing and any improper collusion between the auditor and the concern for which he is working would, when demonstrated, entirely destroy the value of his future certificates of audit, as well as inflict upon him the loss of his professional standing and in some cases legal penalties as well.

When an audit has been completed, it is customary for the auditor to make out and sign a certificate. This certificate gives the name of the auditor and may simply certify that the balance sheet has been found to be a correct representation of the affairs of the business or it may also certify that the audit has included the inspection of the property, and the ascertainment that the items of property claimed are on hand just as asserted. How extensive the audit shall be and consequently how extensive the certificate can be, is a matter depending upon the scope of the agreement made between the auditor and the concern originally and the work the auditor has been engaged to do. The auditor if simply employed to look over the books and report will properly regard it as no part of his duty to explain to the directors what changes should be made in order to put their accounting system upon a suitable basis or what methods should be adopted in order to improve the organization of the business.

Report on Condition of Business.

In many cases, however, while the balance sheet is tolerably correct as a representation of conditions and as showing that the actual accounting has been honestly and accurately carried on, it may appear as the result of the inquiry that the actual condition of the business as a profit-making concern is not fully exhibited or that there are conditions growing out of the organization of the concern or the nature of its competition with others and the like that tend to make the values exhibited by the books nominal

rather than real. In such cases, if the auditor has been employed in order to ascertain the real worth of the business as a going concern, his duties may broaden out very considerably and it may be a part of his responsibility in the larger sense of the term to make a report upon the question whether the concern can, as things stand, be expected to go on doing the same in the future as it has in the past. The inquiry is now developed into a general discussion of investment and competition, just as the devising of an accounting system in the first place may frequently broaden into a discussion of business organization. Under such conditions the duties of the auditor are those of a business adviser or an adviser on investments, and cannot be exactly defined. Much will depend upon the general judgment of the auditor in such cases and the extent of the confidence reposed in him by the persons who have employed him. This is particularly the case in those instances where an auditing firm or auditor has been employed to visit a certain business, investigate it, and find out whether it will be well for a prospective purchaser to share in the enterprise as he perhaps contemplates doing.

Examples of an Audit.

The principles which have been laid down in general terms in the foregoing part of this section are, as has been stated, incapable of specific application as definite rules of thumb to any particular business, because of the fact that businesses vary so widely in the details of their accounts, in the number of books which they keep or omit, and in the actual methods of filing vouchers, invoices, and original records of various kinds. In order to illustrate, however, with greater definiteness the actual working of an audit, attention may be given to the methods by which a bank examination is conducted. This is possibly the best illustration that can be afforded of the making of a detailed audit because, as has already been said, the principles upon

which bank accounts must be kept have been set forth with considerable detail in law, and absolute uniformity is required under the national banking act. Somewhat the same is true of the work done under the direction of the Interstate Commerce Commission in connection with railroad accounts. The bank audit, however, affords the most concise and comprehensible illustration. The auditor who is called upon to make a bank examination will first select a department of the bank with which to start. He will probably begin with the department of the bank in which cash is received by the receiving teller. Here he will actually count the cash and ascertain whether it agrees with the amount indicated in the teller's own record. He will then look over the checks that have been received and the checks that are to be cleared through the clearing house and will ascertain whether they have been properly entered on a clearing-house sheet. He will examine the checks that have been deposited and will compare their amount plus that of the cash and the items held for collection on other banks to see that they are equal to the total amount of deposits received for the day. Where the auditor comes periodically to the bank and is more or less familiar with the signatures of depositors, he will bear in mind the question whether all checks seem to be bona fide. The examiner in entering the department of the bank where cash is paid will verify the cash as before and will examine the checks paid during the day on which he makes the examination, ascertaining that the total amount paid is the same as is indicated on the books. He will further find out whether cash on hand plus the amount of checks cashed during the day plus amounts charged to other departments of the bank agrees with the total cash held on the previous day at the end of business. Of course incidentally the items charged to other departments of the bank and the vouchers for currency paid or shipped, etc., will be verified. A similar process will be carried

out in any other departments into which the bank may be divided for the purpose of receiving or paying funds; or if the bank is a small institution and its paying and receiving officers are the same, the test will be correspondingly modified so as to include the various classes of operations performed. The question of payments and receipts of cash and cash items having been considered by the examiner, he may devote his attention to the discounts of the bank. Here the fundamental inquiry will be that of ascertaining whether the record of discounts corresponds with the accounts in the general ledger posted therefrom; or, if paper has been sent away for the purpose of collection or some similar purpose, it will be necessary to ascertain that the representations made concerning such paper are correct. The auditor will also examine the question of the adequacy of the security and if he has reason to think that given paper is bad or doubtful he will make a note concerning it. If loans have been made on collateral he will verify collateral and, in cases where it is insufficient owing to shrinkage of value, he will so indicate in his report. Passing to the bookkeeping division the work will be more mechanical. Here the task will be that of checking depositors' accounts for a given period with the receiving department's records, and the accounts in which discounts have been entered with the records of the discount department. Similarly the individual depositors' accounts will be checked up in comparison with the sums paid by the paying teller, and depositors' balances will be compared with the showing made in the general ledger. The assets of the bank as represented by securities held will be verified by actual examination of the assets in comparison with the accounts relating thereto. Then the auditor can examine into the assets which are represented by accounts with other banks, with the Federal Treasury, or elsewhere, which can be done by writing direct to the correspondent banks, the Treasury, etc., and receiving back

a reply stating the condition of the accounts referred to. By comparing these reports with the figures shown in the corresponding accounts on the books, this phase of the assets is sufficiently dealt with. The examiner is then in position to make out a report to the Comptroller of the Currency who sent him to the bank. This he does on a form specially provided for the purpose with questions and blank spaces for the filling in of all the principal data. A reproduction of such a report is seen on pages 198 to 206, and furnishes a good example of an auditor's report of this kind. What has been said of the problem of bank examination holds equally true of other classes of concerns except that, in the several classes, the problems differ from one another because of the different character of the assets and the varying importance assignable to various accounts. All this makes it necessary to vary the degree of stress laid by the auditor upon different phases of the auditing according to the varying character of the business which he is called in to examine.

Analyses of Accounts.

While, as has been said, the auditor's duty may end with merely ascertaining and certifying the correctness of the work done or, beyond this, the truthfulness of the showing made as to assets and liabilities, profits and losses, one or both, the auditor may be asked to do more than this or in connection with his work he may have opportunity or find it necessary to go further than this by analyzing the different accounts that are submitted to him. Such analyses are needed for the purpose of showing what is the composition of a given account—that is to say, what elements have gone into it and from what sources they have been drawn. For example, "expenses" may cover a multitude of things including expenses of various legitimate kinds and others of a less legitimate character. The analysis will show a grouping of items by classes. That

is to say, the account may be broken up into a series of groupings or headings. For instance, the expense account, referred to above, may be broken up into different classes of expenses whose totals will be the same as the totals shown in the combined account on the books. This may be a desirable thing for the auditor to undertake for the purpose of testing the accuracy of the statements and especially for ascertaining whether improper entries have been made in the accounts. By summarizing the analyzed results of an extensive account, important inferences may be drawn regarding outlays which are growing disproportionately large or are tending to outrun the capacity of the business or are affording an opportunity for fraud. It is desirable also in such analyses at times to indicate where the different items were drawn from in the subordinate books. Such analyses are frequently made by the auditor for the purpose of ascertaining whether given instructions have been obeyed or given legal requirements have been lived up to in connection with expenditures. As a result of such analyses of extensive and inclusive accounts, the auditor is then in position to render a report showing whether the requirements in mind have been observed, whether the accounting may not well be changed and systematized, and whether the analyses do not show a necessity for alterations in business practice or in methods of accounting.

The Auditor's Report.

Reference has already been made to the auditor's report at the close of his investigation. As will be gathered from what has been said, such a report varies a good deal for different businesses. For every business there will first be given an outline of the time covered and the orders under which the audit was conducted, then the statements which are included and any general remarks about the conditions ascertained. The statements included will cov-

er in the case of the ordinary retail establishment balance sheets for the opening and close of the period dealt with, a copy of profit and loss and trading accounts, and lists of bills payable and bills receivable, and frequently accounts payable and receivable at the time the audit was concluded. For a manufacturing concern there will be added to these a summary statement of the manufacturing account. For a fiduciary officer whose accounts have been audited the exhibits needed as attached statements will be the balance sheets for beginning and end of the time covered, a statement of incomes and outlays, and another of total receipts and payments. To these will be added a careful list of assets, securities owned, etc. Finally, the auditor will append a certificate to the effect that he has audited the accounts, books, securities, etc., (omitting or adding such items as have not or have been examined), that he has checked up the balance sheet, and that the sheet indicates the true condition of the business as shown by the books. (See p. 192 foregoing.)

The following reproduction of an examiner's outline of report on condition of a national bank gives an idea of the detailed items, knowledge of which is necessary to an understanding of the exact condition of the institution.

No. of Bank, ...

EXAMINER'S REPORT

of the

Condition of "The ...."

Located at ...., in the County of ....

State of ....

Examination commenced at ......o'clock....M., on ...., 190

Examination closed at ......o'clock ....M., on ...., 190

..........................., President. ...., Cashier.

Resources.	Amount.	Liabilities.	Amount.
1. Loans and Discounts (see schedule),		1. Capital Stock paid in,	
2. Overdrafts,		2. Surplus Fund,	
3. U. S. Bonds to secure Circulation (%),		3. Other Undivided Profits, viz: Discount. $ Exchange, Interest, Premiums, Rents, Profit and Loss,	
4. U. S. Bonds to secure Deposits (%),		4. Due to applied Reserve Agents, viz:	
5. U. S. Bonds on hand (%),		5. Due to other National Banks,	
6. Premium on U. S. Bonds,		6. Due to State Banks and Bankers,	
7. Bonds, Securities, etc. (see schedule),		7. Due to Trust Companies and Savings Bank and Foreign Exchange,	
8. Banking House, $ Furniture and Fixtures,		8. Dividends unpaid,	
9. Other Real Estate Owned (see schedule),		9. Individual Deposits, viz: Subject to Check, $ Savings Deposits, Demand Cert's, Time Cert's, Certified Checks, Cashier's Checks,	
10. Due from app'd Reserve Agents, viz:		10. United States Deposits,	
11. Due from other National Banks,		11. Deposits of U. S. Disbursing Officers,	
12. Due from State Banks, and Bankers,		12. Circulation received, $ Less on hand and returned,	
13. Due from Trust Companies and Savings Banks and Foreign Exchange,		13. State Bank Circulation outstanding,	
14. Exchanges for Clearing House,		14. Notes and Bills rediscounted,	
15. Checks on other Banks in same place,		15. Bills payable,	
16. Bills of other National Banks,		16. Cash over,	
17. Uncurrent and Minor Coins,		17. Loans held in trust for customers,	
18. Cash Items,			
19. Lawful Money Reserve in Bank: Fractional Silver, $ Silver Dollars, Silver Certificates, Gold Coin, Gold Certificates, Legal-Tender Notes, Gold Cert's payable to order, C. H. Cert's of Dep.,			
20. 5% Red'n Fund with Treasurer U. S.,			
21. Other Funds with Treas. U. S.,			
22. Current Expenses, $ Taxes paid, Interest paid,			
23. Cash short,			
24. Loans made for account of customers,			
Total,		Total,	

No. of Bank, ...

Directors.

No. of Shares Owned.	Names.	Post-Office Address.	Liability as Payers (individual or firm), including overdrafts.	Liability as Joint Makers.	Liability as Indorsers or Guarantors	Occupation
		Total,				

[Ascertain from record book how often directors meet as a board, and whether they authorize or approve loans and discounts at such times; whether they have active discount and examining committees, or leave management entirely to the officers; whether annual meeting of shareholders was held, and whether any director, other officer, clerk, teller, or bookkeeper acted as proxy. Any vacancy in board should be noted. Opposite the name of each director enter full amount of all paper in bank upon which his name (individual or firm) appears as maker, indorser, or guarantor, but where two or more directors are liable on the same paper deduct from the totals the duplicate liabilities, so as to show the net liabilities of all directors.]

Officers and Employes.

	Names.	No. of Shares Owned.	Liability as Payers (individual or firm), including overdrafts.	Liability as Indorsers or Guarantors	Salary.	Bond. (If any.)	Other Occupation (If any.)
President, Vice-President, Cashier, Assistant Cashier, Teller, Bookkeeper,							

[Examine official bonds; state form of bonds; whether in force and in whose custody lodged; whether any officer or clerk of the bank is an officer or clerk of any savings bank or other banking institution located in same place; which employe keeps the individual ledger; whether any officer or employe who receives deposits makes entries in the individual ledger; whether the individual ledger bookkeeper sometimes acts as teller; who balances the depositors' pass books, and whether the balances are compared by some one other than the individual ledger bookkeeper; which employe keeps the general ledger, and who reconciles bank balances.]

Books and Accounts.

[Follow instructions as to verification of accounts and state specifically whether bank uses the daily balance system for individual ledger accounts; whether the ledgers are properly and promptly posted, and how often they are balanced; how often loans and discounts are verified, and how often accounts with corresponding banks are reconciled.]

RESOURCES.

No. of Bank, ...

1. Loans and Discounts.

[The loans and discounts and other securities must be carefully verified and every discrepancy noted.]

A.—On demand, paper with one or more individual or firm names,	$
B.—On demand, secured by stocks, bonds, and other personal securities,	
C.—On time, paper with two or more individual or firm names,	
D.—On time, single-name paper (one person or firm) without other security,	
E.—On time, secured by stocks, bonds, and other personal securities,	
F.—On time, secured by real estate mortgages or other liens on realty (see schedule),	
Total,	
Included in the above are—	
G.—Bad debts, as defined in Section 5204, Revised Statutes (see remarks below),	
H.—Other suspended or overdue paper (see remarks below),	
Total,	

Loans exceeding the limit prescribed by Section 5200 of the Revised Statutes.

Overdrafts, if any, are regarded as loans.

Name of Borrower. (State value of security and financial standing of makers and indorsers.)	Date.	Enter Full Amount of Loan.	Name of Borrower. (State value of security and financial standing of makers and indorsers.)	Date.	Enter Full Amount of Loan.

[Describe the general character of loans and discounts, particularly those reaching the limit, other large loans and loans to other national banks, giving date and maturity of latter loans; state whether accommodations are well distributed; the financial standing of makers and indorsers; and the current rate of interest obtained. If any director or officer has a large liability as payer or indorser, state whether it comprises direct loans, or strictly commercial or business paper discounted for him, accommodation paper made by others for his use and indorsed by him, or accommodation indorsements, and if the latter, state whether he is loaning the bank's funds on real estate security in this way in his name. Describe also all loans and discounts to corporations or enterprises in which directors and officers are interested. State whether loans are secured by collateral, and, if so, its character and value.]

Suspended or Overdue Paper, including "bad debts" as defined by Section 5204.

[Describe general condition of such paper, state how secured and how long it has been in the bank. List only items on which loss has or will be sustained and state the amount of loss.]

RESOURCES—Continued.

No. of Bank, ...

2. Overdrafts.

[State what amount is unsecured, and whether habitually granted. Overdrafts exceeding limit named in Section 5200 should be classed with Excessive Loans, and unsecured overdrafts which have remained unchanged for six months or longer should be noted. The amount of overdrafts at date of examination should be verified by the examiner, who should also compare the amount of overdrafts stated in the bank's last report of condition with the amount shown by its books at same date, and report any discrepancy discovered.]

8. Banking House.

[State whether suitable and convenient; for what other purpose used (if any); and, if owned by bank, whether carried at fair value on books, and whether building is insured; whether vault and safe are good and secure, and used by the bank only; whether furniture and fixtures are worth book value, and whether any savings bank or other banking institution occupies the same office with the bank under examination.]

10, 11, and 12. Due from Reserve Agents, Trust Companies, Banks, and Bankers.

[Verify all balances by correspondence on blanks furnished for this purpose, but forward report promptly without awaiting verification. Any discrepancies which may be disclosed should be reported by letter afterward if they can not be reconciled by the examiner. State whether bank receives interest on any balances, and at what rate. If any amounts are represented by certificates of deposit issued by other national banks, state whether they are secured by collaterals. Verify bills in transit, foreign bills, and other items not in custody of bank, in accordance with instructions.]

17. Cash Items.

[State whether regular; and if overdue paper, memorandum loans, checks, dishonored drafts, expense items, etc., are carried here, briefly describe such items.]

18. Reserve.

[State whether reserve (total and in bank) is sufficient at date of examination; the average for thirty days preceding, where practicable, and describe its general condition since last examination.]

Are national bank notes separated from the other currency, both as to counter cash and currency in the vault?

If not, did you separate them at the time of the examination?

Is an exact daily record kept of the different kinds of money on hand?

RESOURCES—Continued.

No. of Bank............

7. Bonds, Securities, etc.

Enter number of shares of stock or face value of bonds, and state whether bonds or stocks.	Name of corporation issuing stocks, bonds, etc.	Amount at which carried on books.	Estimated actual market value.	State whether taken for "debts previously contracted," or otherwise, and if interest or dividends are regularly paid, etc.
	Total,			

9. Other Real Estate Owned.

Describe property.	Amount at which carried on books.	Amount of prior lien on property, if any.	Estimated actual value of property.	Date when title was acquired.	State whether taken for "debts previously contracted," or otherwise.
Total,					

Loans and Discounts secured by Real Estate Mortgages or other liens on realty.

Give name of borrower and form of collateral.	Amount of loan.	Amount of prior lien on property, if any.	Estimated actual value of property.	Date when security was taken.	State whether taken to secure "debts previously contracted," or otherwise.
Total,					

LIABILITIES.

No. of Bank, ...

1. Capital Stock.

[State whether stock certificate book and stock ledger are properly kept, whether surrendered certificates are properly canceled and attached to stubs, and whether stock certificates are signed in blank. Verify amount of stock outstanding. State also whether the bank owns or holds as collateral for loans any shares of its own stock, and, if so, for what purpose, and give date when taken. In the case of a new bank, ascertain and state whether its capital has been paid in cash, or whether any shareholders' notes have been taken for stock subscriptions.]

2 and 3. Dividends and Surplus (Sections 5199 and 5204, U. S. Revised Statutes).

Date of last dividend, Amount, $ Carried to Surplus, $

Charged off since last examination: Losses, $ Premium, $

Decrease of values, $

[State if any reason is known why the bank should not declare a dividend at the end of the current dividend period.]

[Compare the bank's last report of earnings and dividends with the amount of profits shown by its books at same date, and report any discrepancy discovered. Report all profits irregularly carried on individual ledger, in special accounts, or charged off the books.]

4, 5, and 6. Due to Reserve Agents, Trust Companies, Banks, and Bankers.

[Verify all balances by correspondence on blanks furnished for this purpose, but forward report promptly without awaiting verification. Any discrepancies which may be disclosed should be reported by letter afterward if they can not be reconciled by the examiner. State whether amounts are due on open account or on demand or time certificates of deposit, whether secured by collaterals, and what rate of interest, if any, is paid.]

8. Individual Deposits.

[State whether interest is paid, and, if so, at what rates and to what extent; whether certificates of deposit are issued for the purpose of borrowing money, and, if so, give list of them, under 13 and 14, showing amount of each certificate, to whom issued, whether payable on demand or on time, and at what rate of interest, and whether secured by collaterals of the bank. State whether a proper record of all certificates of deposit issued is regularly kept in a book for that purpose. If certificates of deposit are issued to other national banks, give full information regarding them. If bank conducts a "savings" department, state the amount of such deposits, with rate of interest paid. If bank holds State, county, municipal, or other balances subject to check, which will, if suddenly withdrawn, seriously reduce its reserve, state the amounts and rate of interest paid.]

13 and 14. Rediscounts and Borrowed Money.

[Where money is borrowed by rediscounts, on open account, or otherwise, state below where and when accommodation was procured, the form and amount of obligation, rate of interest paid, date of maturity, and whether secured by collaterals of the bank. State also whether bank borrows habitually, and whether such liabilities have been authorized by board of directors. If borrowing is from other national banks, give full information concerning transactions of this character, including date of issue and maturity.]

Recapitulation.

[Wherever it appears that any loss has been sustained or is probable on any item, or that the value has depreciated, enter the book value of such item or items in schedule below, together with estimated probable loss thereon. If no loss is probable, indicate that fact by the word "none." In every report enter in this schedule the amount of surplus and profits on hand at date of examination.]

LIABILITIES—Continued.

No. of Bank, ...

IN ALL CASES WHERE LOSSES ARE ESTIMATED, FURNISH ITEMIZED LIST.

Resources.	Book Value.	Probable Loss.	Estimated Value of Assets not Shown on Books.	Surplus, Undivided Profits, Etc.	
"Bad Debts,"	$	$	$	Surplus fund,	$
Other overdue paper,					
Other loans and discounts,				Undivided profits,	
Overdrafts,				Total,	
Premiums on U. S. bonds,					
Bonds, securities, etc.,					
Banking house,				Less current expenses taxes, etc.,	
Furniture and fixtures,					
Other real estate,				Total Surplus and Profits,	
Cash items,					
Total,					

General Remarks as to Condition of Bank.

[State briefly your opinion as to the general condition of the bank, and whether its business is prosperous or otherwise, whether officers are capable, prudent, and of good reputation; the management efficient and successful, or otherwise; and give summary of matters to which special attention should be called, using extra sheet if necessary.]

To the Comptroller of the Currency, ...

Washington, D. C. Examiner.

IMPORTANT

Please answer "yes" or "no" to each of the following questions as to examination of this bank, No. ...., over your signature.

Did you count the cash, as instructed?

Did you examine and list loans and discounts and all collateral held therefor, as instructed?

Did you note all loans and discounts to directors and officers, and to enterprises in which they are interested, as instructed?

Did you examine and list all stocks, securities, etc., held by bank, and all real estate and mortgages owned or held by it, and Treasurer's receipt for U. S. Bonds, as instructed?

Did you take off or verify a balance of accounts on individual ledger or ledgers?

Did you check off last statements received from corresponding banks and find them correct?

Did you verify outstanding certificates of deposit, certified checks, and cashier's checks, as instructed?

Did you take off balance of stock ledger and examine stock certificate book, as instructed?

Did you examine profit and loss and expense accounts, as instructed?

Did you examine minutes of directors' meetings, discount committee meetings, and shareholders' meetings, as instructed?

Did you examine into condition of lawful money reserve for thirty days preceding examination?

Did you compare bank's copy of last report of condition to Comptroller with its books at same date?

Have you sent out verification circulars (Form 2192) as follows:

1. To all banks and bankers to which, or from which, balances are due?
2. To all parties from whom money has been borrowed on bills payable, certificates of deposit, or notes and bills rediscounted?
3. To all parties to whom items have been sent for collection?
4. To all officials in whose names State, county, or municipal funds are deposited?
5. To the U. S. Treasurer (care of N. B. Redemption Agency) for verification of 5 per cent fund on Form 2195.

....
Examiner.

NOTICE.— Fold pages together but do not use any fasteners.

☞ Fill Indorsement with Typewriter.

No. of Bank,..............

EXAMINER'S REPORT

of

The..............................

Located at

....

..............................,190

....
Examiner

PART II.

INTRODUCTION.

In the following pages it has been sought to compile material that will be of service to the student who desires a comprehensive knowledge of accounting problems as practically presented. Inasmuch as readers of this volume may be desirous of taking and passing accountancy examinations, the first section of this Part—Section A—deals with sundry suggestions for study and with methods of preparing for such examinations. Several sets of examination questions are given, all being drawn from the questions set at various times by the New York board of accountancy examiners.

In Section B is reproduced the outline of accounting terms which has been prepared for the United States Government as a preliminary to the study of its statistics of cities. The summary treatment here given is of special value in differentiating public and municipal accounting from commercial and private accounting. A considerable number of terms are clearly defined which have not been treated in Part I of the present volume, and the discussion, it is therefore believed, will be of service in supplementing the material already presented. In Section C is given material dealing directly with governmental methods of accounting, one monograph on federal accounting being reproduced.

In Section D is given a treatment of the new federal corporation tax and its application to corporation account-

ing. This is a field of accounting which has assumed large importance in England, and in other countries where taxation has necessitated the keeping of accounts in specified ways. The field is comparatively new in the United States and it is therefore deemed wise to present first the law applying the corporation tax and the regulations under which the Federal Government has sought to put it into effect. There is also offered a treatment of the accounting phases of the subject by a student of recognized standing. In Section E is presented an outline treatment of cost accounting in which public and private methods of cost keeping are theoretically considered. This may with profit be read in connection with the section on the same subject given in Part I of the present volume.

An additional exposition of some of the more difficult principles of the subject has also been reproduced. In Section F three Federal Supreme Court decisions rendered in cases involving accounting questions are offered in order that the student may familiarize himself with the lines of reasoning employed by the courts in adjudicating accounting questions. The work of the courts has become exceedingly significant in connection with accounting issues abroad, and is likely to become progressively more so in the United States. In Section G is given matter relating to, or descriptive of, certain phases of standard systems of accounts. A part of this matter is drawn from the balance sheet prescribed for the railroads of the United States by the Federal Government, and a part from a system put into effect by a large and highly organized private company. The student will profit from an examination of these systems of accounting in conjunction with the section on corporation and manufacturing accounting offered in Part I of the present volume.

Very sincere thanks are due the Editor of the Journal of Accountancy, the Editor of the Government Accountant, the Editor of the Yale Review, Hon. LeGrand Powers,

U. S. Census, and Hon. Lawrence O. Murray, Comptroller of the Currency, for permission to use matter presented in this Part.

Particular acknowledgment should also be made to the several of those whose work is reprinted here, for the permission and encouragement they have given the present compiler, in reproducing their writings.

SECTION A.

WORKS FOR THE STUDY OF ACCOUNTING.

Chase, Auditing and Cost Accounting (LaSalle Extension University).

Cole, Accounts, (Houghton Mifflin & Co.).[4]

Dicksee, Bookkeeping for Accountant Students, (Gee & Co., London).[3]

Dicksee, Advanced Accounting, (Gee & Co., London).[4]

Grierson, Bookkeeping for Commercial Classes, (Blackie & Co., Edinburgh).[1]

Grierson, Advanced Bookkeeping, (Blackie & Co., Edinburgh).[2]

Hatfield, Modern Accounting, (Appleton & Co.).[5]

Keister, Corporation Accounting, (Burrows Bros.).[8]

Lisle, Accounting in Theory and Practice, (William Green & Sons, Edinburgh).[6]

Lisle, Cyclopædia of Accounting, (William Green & Sons, Edinburgh).[7]

Sprague, Philosophy of Accounts, (Published by Author, N. Y. City).[9]

The Accountants Library, (Gee & Co., London).[10]

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1. Should be studied by reader of the present volume in conjunction therewith, unless he already has a knowledge of bookkeeping principles and practice.
2. Should follow the preceding for use with the present volume.
3. May be substituted for the works referred to in Notes 1 and 2.
4. May be read collaterally with the present volume by those who desire fuller exposition of details and discussion of matters not dealt with in the present volume.
5. May be read as collateral if desired.
6. Affords valuable detailed information on special phases of accounting.
7. Authority on all phases of accounting theory and practice.
8. May be consulted on special phases of corporation accounting practice.
9. Of service on some of the more abstract questions of accounting theory.
10. A series of reliable monographs on the accounting problems of various classes of business.

ACCOUNTANCY EXAMINATIONS.

While the study of accountancy is of fundamental value to those who have accountancy systems to install or who are concerned with the business of conducting, and improving upon, sets of books, there is, as has been noted in the earlier part of this volume, a growing demand of a new sort for expert knowledge of accounting. This demand is afforded by what is now called the accountancy profession whose demands and functions have been sketched in general terms in Part I of the present book. It is, therefore, important to many students of accounting to know how and under what conditions they can gain admission to the profession of accountancy and under what circumstances the practice of that profession is best carried on.

The present tendency is toward the regulation and control of the accountancy profession by two methods: (1) State legislation and (2) private organization among accountants:

State Legislation.

The State of New York passed the first law relating to accountancy in 1896.*

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* The New York Certified Public Accountant law, which may be regarded as typical, is as follows:

Section 1. Any citizen of the United States, or person who has duly declared his intention of becoming such citizen, residing or having a place for the regular transaction of business in the state, being over the age of twenty-one years and of good moral character, and who shall have received from the regents of the university a certificate of his qualifications to practice as a public expert accountant as hereinafter provided, shall be styled and known as a certified public accountant; and no other person shall assume such title, or use the abbreviation C. P. A. or any other words, letters or figures, to indicate that the person using the same is such certified public accountant.

Section 2. The regents of the university shall make rules for the examination of persons applying for certificates under this act, and may appoint a board of three examiners for the purpose, which board shall, after the year eighteen hundred and ninety-seven, be composed of certified public accountants. The regents shall charge for examination and certificate such fee as may be necessary to meet the actual expenses of such examinations, and they shall

In 1899 a statute designed for the same purpose as that of New York was passed in Pennsylvania. Maryland passed a law in 1900 and California one in 1901. Laws were enacted by Illinois and Washington in 1903 and by New Jersey in 1904. Other states followed in 1905, 1906, 1907, 1908 and 1909, until in all twenty-one laws have been passed. The essential ideas embodied in these acts of legislation are the establishment of conditions under which the certificate or degree of C. P. A. (Certified Public Accountant) may be granted, and the making of provision for the enforcement of standards through examinations offered by a board of examiners which is presumably responsive to the best professional opinion on the subject. No action has been taken by the Federal Government with reference to the recognition of certified public accountants and nothing has been done in connection with public regulation of corporation accounts that specifically calls for the recognition of certified public accountants as such. It has been desired by some that, in its inspection of the accounts of corporations, the Federal Government should accept a certificate on certain points rendered by a properly qualified public accountant but thus far nothing whatever has been accomplished in that direction.

Professional Control.

Professional control of the standards and methods of the accountancy profession is proceeding along much the same lines as have been followed in other occupations. Associations of accountants have been organized, conspic-

report, annually, their receipts and expenses under the provisions of this act to the state comptroller and pay the balance of receipts over expenditures to the state treasurer. The regents may revoke any such certificates for sufficient cause after written notice to the holder thereof and a hearing thereon.

Section 3. The regents may, in their discretion, waive the examination of any person possessing the qualifications mentioned in section one who shall have been, for more than one year before the passage of this act, practicing in this state on his own account, as a public accountant, and who shall apply in writing for such certificate within one year after the passage of this act.

Section 4. Any violation of this act shall be a misdemeanor.

Section 5. This act shall take effect immediately.

uously the American Association of Public Accountants, which hold regular meetings and a part of whose duty it is directly or indirectly to pass upon the standards for admission to the profession and the practices that may be followed within it. In this as in other professions, the control exerted by such associations has been unofficial purely and has been intended to exert merely a wholesome influence in the way of forming public opinion and establishing standards of conduct. This movement is being assisted through the organization of courses in accounting and subjects kindred thereto in several of the principal universities of the country. In these it is sought to give training which will not only fit for the taking of C. P. A. examinations but will also equip students for further work along new lines in accounting where expert qualifications of the larger sort than those called for by routine accountancy are demanded.

Scope of Education.

In accountancy, as in other professions, it is found that the examinations which are required of those who desire to obtain a certificate authorizing them to practice the profession are usually placed at a minimum by the constituted authorities; that is to say, the certificate of C. P. A. represents about the smallest amount of information that is actually requisite to the practice of the profession. This does not mean that C. P. A. examinations are "easy"—quite the reverse—but that their scope is limited to those subjects which are undoubtedly indispensable, or practically so, to the accountant's work. The question may fairly be raised then how far actual education can be directed toward the fitting of men for the passing of accountancy examinations, how far more general education is actually needed by the would-be accountant, and in what directions this kind of education should be secured. In

considering these questions, a beginning may be made with the scope of the C. P. A. examination.

C. P. A. Examinations.

Some states limit the examination itself to commercial law and general accounting with fairly large liberty to the board of examiners to arrange the different papers on different branches of the subject as they see fit. Other laws provide for examinations in the theory of accounts, in auditing, in practical accounting, and in commercial law. Here the greatest difficulty to be met by the student at the outset perhaps lies in discriminating between the theory of accounts and the practical accounting. At another point in this volume (see pp. 211, ff.) have been reproduced the questions set over a period of years in the New York state examinations with reference to the theory of accounts. A reading of these questions will show the nature of the information which has been grouped under that head by the New York examiners who may be taken as fairly representative of the profession. It is seen that these questions relate entirely to the principles of accounting, that is to say, to the question how certain operations should be performed or problems should be solved and not to the actual solving of difficult questions of technique. In order to get the information needed for this particular phase of an accountancy examination the student may consult, in addition to the works in this series, several excellent works which have been listed elsewhere in this volume (see page 210). Among these as suitable for the beginner may be mentioned Grierson's Bookkeeping for Commercial Classes, Grierson's Advanced Bookkeeping, Dicksee's Bookkeeping for Accountant Students, Dicksee's Advanced Accounting, Lisle's Accounting, Sprague's Philosophy of Accounts, and for a few special points Keister's Corporation Accounting. For current discussions of new problems and for information designed to keep the student

abreast of the times in accountancy recourse may be had to The Accountant published weekly in London (Moorgate Street) and the Journal of Accountancy published in New York (32 Waverly Place). From these sources sufficient information can be obtained by the student who is working independently, to fit him to pass the accountancy examinations. Of course, if he is so situated as to be able to attend courses in accountancy, such as are given by some of our universities located in large cities, he will profit very largely by attending lectures and classes, even though nothing is added to his general stock of information, but only a training in methods of work and in the point of view to be adopted with reference to the study of accountancy.

Practical Accounting.

Practical accounting is differentiated from the theory of accounts in that the papers consist of problems presumably drawn from actual experience. The candidate is called upon to give an adequate solution of the problem by showing how such a question would be dealt with in practice and sketching usually the various entries that are necessitated by the terms of the problem. Obviously only two suggestions can be made with reference to this portion of the examination: (1) The candidate should have as large a practical experience as possible in accounting; the more varied it is the better training it provides for the quick working out of the practical questions; (2) in lieu of practical experience, which not all perhaps can have secured prior to taking the examination, the candidate should familiarize himself with as many questions as possible from those that have actually been set in the past by accountancy boards and particularly by the board of examiners in his own state. Difficulty often arises in this part of the accountancy examination from the fact that the time allowed is very short, so that the candidates,

although they might successfully work out the problems if they had time, fail by reason of the fact that they cannot answer enough questions in a sufficiently short time to make a passing grade. It is said that "more candidates fail in practical accounting than in any of the other subjects." Probably an important part of the preparation for the examination will be found in familiarizing one's self with a great number of actual practical problems stated in general terms, so that in the examination room the candidate may be able to assign any particular state of facts or problem that may be set before him to a given class of general problems or conditions previously formed in his own mind through the study of typical instances.

Auditing.

The examination on auditing is likely to be somewhat of a combination of questions of theory and practice. This involves the difficulties of both classes of questions and it has been said that, to pass a good examination in auditing, experience is almost absolutely necessary; this experience to be had of course in practical auditing, which means substantially in an auditor's office. Some states require that a candidate shall have served a given number of months in such an office before becoming a candidate for examination but this is not a universal requirement. Experience shows, however, that where such practical training has not been had candidates may pass very satisfactory examinations in auditing provided they have surveyed the ground in sufficient detail beforehand. The difficulty comes from the fact that, as auditing is essentially a practical matter, the student who seeks to pass the examination is obliged to substitute the results of his reading for practical experience. True, in some cases, examination papers do not deal specifically with auditing as such but in many instances the questions set are those which, it might be expected, would come under the head of theory

of accounts. Nevertheless, most auditing examinations contain specific questions with reference to the process to be pursued in actually auditing the accounts of a firm or corporation.

By way of preparation for such an examination the student, in addition to the work he has devoted to the theory of accounts as such, may well cover the subject of auditing, using the reliable volume on this subject in the present series. For additional reading, Dicksee's Auditing is recommended. To this, however, should be added studies of the way in which the business of actual concerns is in practice audited. Information on this topic can be obtained by securing the instructions, blanks, etc., employed in examining the accounts and books of various classes of concerns which are subject to periodical examination. One of the best examples of this sort of work will probably be found in the National Bank Examination System, data about which have already been given in this volume (see page 172). By carefully studying the process of auditing and examining the books of a concern as it is followed out in some important system of this sort, a substitute for practical experience may be had which will serve the purpose in the examination room.

Mr. William A. Chase gives the following as an example of a representative examination on auditing:

What are the nature and principles of an audit?

Illustrate the bearing of the term 'depreciation' upon accounts representing investments in stocks and shares, buildings, leases, plant and machinery, and profit and loss.

In auditing the accounts of the first financial year of a corporation which was formed to acquire an established business, what documents, books, etc., would you require to have produced for your inspection?

It is frequently alleged that dividends have been paid out of capital. Explain this statement and point out in what ways a dividend can be so paid.

Are there, in your opinion, any circumstances which would justify the addition to actual cost of any anticipated profit, in the case of partially manufactured goods, or of an uncompleted engineering contract, or in similar cases?

In your examination, as auditor of securities consisting of bonds to bearer, inscribed stocks, certificates for shares and bills receivable, what would be your method of procedure and what main object would you have in view?

A firm expends large sums upon advertisements in order to form a business. Assuming that the expenditure thereon decreases annually until in the seventh year it reaches a point representing a normal annual cost under this head, how would you expect the amounts to be treated in each year's balance sheet? In your reply let $70,000.00 be the expenditure of the first year, and decrease $10,000.00 annually.

What steps would you, as auditor, take to see that proper provision had been made for bad and doubtful debts?

(a) In the case of a private firm.

(b) In the case of a corporation.

In auditing the accounts of a trading firm or corporation, state the steps you would take to verify the cash book.

If you were asked to make an examination of a firm's books for the purpose of giving a certificate of profits with a view to its conversion into a corporation, how would you make your examination, and what are the chief points to which you would direct your attention?

Commercial Law.

Accountancy examinations usually include a paper on commercial law and this has raised the question whether a man before becoming an accountant ought not really to be legally trained. A law education is by some held to be very desirable as a part of an accountant's equipment while others are inclined to question the usefulness of the law examination as ordinarily given. Many papers on com-

mercial law are undoubtedly little more than enough to indicate a mere smattering on the part of the person who passes the examination. For this reason a systematic course in a resident or good correspondence school of law is by many insisted upon as a really necessary part of an accountant's equipment, since such knowledge of law as he possesses will probably stand him in good stead in unexpected ways in connection with the accounting work that may fall to him to do. Undoubtedly in accountancy, as in other professions, a broad thorough knowledge of all subjects that are even collaterally connected with the principal subject to which the candidate is devoting himself will be of value, but on the other hand this idea might easily be carried so far as to render it practically impossible in operation. As a matter of fact, the accountancy examinations, in so far as they relate to commercial law, do not presuppose a professional law training but merely such ideas on law as are directly and intimately relevant to accounting ideas. The student should be familiar, for example, with the National Bank Act and the National Bankruptcy Act, as well as with local statutes relating specifically to banking, insurance, partnership, corporations, commercial paper, estates, etc., and other matters of like character. "American Law and Procedure," in 14 volumes, edited for the LaSalle Extension University by Dean Hall, of the University of Chicago, and by James DeWitt Andrews, of the New York Bar, is the simplest complete, non-technical treatment of the whole field. For the student who finds it necessary to get the utmost possible information with the smallest amount of work the volume on Commercial Law by Hirschl, and published in this series by the LaSalle Extension University, is recommended.

Mr. Chase gives the following as an example of an ordinary accountancy examination on commercial law:

What do you know about the doctrine of ultra vires as applied to officers of a corporation? Give an example.

How far is the fact that a person shares in the profits of a business conclusive evidence that he is a partner? What further evidence, if any, is necessary to determine whether he is a partner or not?

What do you understand by the phrase, "A seal is said to import a consideration"? A says to X, "I want to take your watch to pieces, but I will put the pieces together again." X consents, but A, after taking it to pieces, refuses to put it together again, and contends that there was no consideration for his promise to do so. Is he right? Give your reasons.

In what cases will a purchaser of goods from a seller

(a) who is not the owner of them,

(b) who has only a voidable title to them, himself get a good title?

State the various ways in which an agent's authority may be determined?

When and how does the failure to present a bill of exchange for payment affect the rights of the holder?

How far is the right of stoppage in transitu affected by the transfer of bills of lading? Would the fact that the transferee had not paid the consignee, or that the transfer was by way of security for an advance, affect your answer?

Can a corporation, if it chooses to do so, issue preferred stock?

Is it necessary to copyright trade-marks and trade-brands to protect the owner against their use by competitors?

In your state what does the law provide as to the payment in part, or in full, of the issue of capital stock by a corporation?

Knowledge of Mathematics.

While some knowledge at least, of law in its commercial aspects, is required in order to pass the accountancy examination and while a general knowledge of law is by

many considered desirable, a knowledge of mathematics is by others strongly recommended as a valuable part of an accountant's equipment. By mathematics as the term is here used is, of course, meant the higher mathematics. This is by some urged on the ground that it tends to increase accuracy, power of concentration, and ability to reason clearly and logically, powers which it is alleged are more strongly cultivated by the study of mathematics than by any other study. Whether the study of mathematics is of more value for these purposes than other kinds of study is a question which need not be discussed here but it is undoubtedly true that in some branches of accountancy, particularly in those dealing with actuarial questions and with depreciation in some of its aspects, a knowledge of mathematics is serviceable. There is however no present probability that knowledge of the higher mathematics will be demanded in the near future as a part of accountancy requirements.

Fairness of Examinations.

The question of the degree of fairness shown in carrying on the C. P. A. examinations in certain states is one that has caused considerable discussion in the past. It has been charged by not a few persons that the examinations in some places were conducted in such a way as to eliminate as many candidates as possible and this charge has been particularly pressed in New York where at times the percentage of failure has been very large. In New York about two-thirds of all applicants were excluded during a period of years, while in one year only 9 per cent of the candidates examined in practical accounting were passed. Usually the questions are ten in number on each topic to which a separate paper is given, and the time allotted for each paper is three hours. It has frequently been charged that the papers set were so long that it was impossible to write the answers in the time allowed, no

matter how well-equipped the candidate might be, while in some instances questions had been obscure and there had been ambiguity in the form of their expression due to doubt about the meaning of a specific word or clause. Occasionally examiners have shown a disposition to be technical in formulating their questions, while others have been biased against accountants whose ideas differed much from their own. The examiners have usually been appointed for short terms and have been busy men so that in many instances they have not acquired the experience as examining bodies or probably devoted the time to their work that was necessary in order to get the best results.

It must also be reluctantly admitted that there has been a disposition on the part of some accountants to desire to keep the profession, and particularly the degree of C. P. A. which goes with it, as close a monopoly as possible. This has been for the selfish reason that with fewer firms of recognized accountants there would be more demand for the services of each, while it would be easier to secure the aid of staffs of men who needed experience in an accounting office as a prerequisite to their becoming candidates for the C. P. A. degree. Attention has been called to these undesirable aspects of the situation by various investigators among which may be mentioned representatives of the New York Journal of Commerce and Commercial Bulletin, while Ernest S. Suffern, C. P. A., in the Journal of Accountancy* calls attention to some of the points referred to. How long this condition of affairs will be permitted to exist as undoubtedly does exist in many states, may be mentioned, but there is reason to believe that the practice will gradually decrease as its prevalence has done more to prevent the adoption of C. P. A. legislation than perhaps any other influence. The profession of accountancy as a profession is still insecure in the United States notwithstanding the dignified position it has secured

* March, 1910, pp. 384, ff.

in England, Scotland and other countries. In order to put it on a permanently recognized professional basis, it must of course accept high professional standards in its own attitude toward professional questions such as those relating to admission to the occupation. In palliation of the indefensible things that have occasionally been done in connection with examinations in some states, it of course is claimed that there has been a large number of ill-prepared candidates in the field, which is undoubtedly true, while it is further alleged that these candidates have lacked uniform text-books and suitable opportunities for training in many instances, this lack of uniformity and want of a common training being itself one of the circumstances which have prevented the giving of examinations in a uniform and standardized way. Doubtless there is some basis for this statement as applied to New York, while in many other states, it is the general consensus of opinion; the criticisms already offered with respect to the methods already pursued in giving accountancy examinations have not the same basis as in the State of New York itself.

One criticism which admittedly holds good in New York, and in some other states as well, is based on the delays and irrelevant obstacles of one kind or another that are frequently thrown in the way of men who have passed the necessary examination. It has appeared in New York, particularly, that even in some cases where men had done all that was necessary in order to get their C. P. A. certificates the certificates were not forthcoming, owing to technical delays attributed in some cases to a failure on the part of the candidate to establish his possession of necessary preliminary education or to some other circumstance of which the applicant undoubtedly should have been informed prior to the date when he had supposed himself eligible for his degree. In other cases men who have asked for a review of their papers have been denied

the rights which they possessed under the law on the ground that the examiners had not the time to attend to the matter. These of course are sporadic cases and the instances cited have been drawn chiefly from experience in New York. While, as already indicated, there are similar difficulties in other states, it is probable that nowhere else is there so much to be complained of.

Advantage of General Training.

In what has been said thus far, attention has principally been given to the actual requirements of the law with reference to accountancy examinations. These requirements must, of course, be lived up to by those who desire to get legal and official recognition as Certified Public Accountants. Behind all such purely legal requirements, however, is the fact that the most effective work in the profession of accountancy can be done by those who have the best general training in the scientific study of modern business and commerce. A general knowledge of economics is undoubtedly of large value to the student, the more valuable in proportion as the study of economics has been directed along practical lines rather than to the purely theoretical side of the subject. Of course it is also true that thorough educational training in other directions will serve the same purpose in equipping a man for accountancy that it does in equipping him for other occupations. Thorough preliminary general education obtained before the candidate thinks seriously of devoting himself to a technical occupation is highly desirable in this as in other lines of work.

Preliminary Education.

Preliminary education is now usually limited in the requirements to the equivalent of a high school course of standard grade and while this may be advanced in some states before very long it is not likely that the level thus set will be raised very materially or generally for some time to come.

EXAMINATIONS ON THE THEORY OF ACCOUNTS.

I.

1. State the essential principles of double entry bookkeeping and show wherein it differs from single entry bookkeeping.
2. Describe the following and show wherein they differ: (a) trial balance, (b) balance sheet, (c) statement of affairs, (d) realization and liquidation account.
3. In devising a system of accounts for a business what are the main subjects for consideration, and in what order should they have attention?
4. Describe the following and show wherein they differ: (a) revenue account, (b) trading account, (c) profit and loss account, (d) deficiency account.
5. State the purposes for which series of perpendicular columns are employed in books of original entry and how these purposes may be accomplished relative to the following conditions: (a) several ledgers comprehended in one system of accounts, (b) several departments comprehended in one business, (c) several accounts comprehended in income and expenditure.
6. Describe the following and show wherein they differ: (a) statement of income and expenditures, (b) statement of receipts and payments.
7. Describe a method of keeping accounts so that the aggregate sums due from customers and due to creditors can be known without preparing a schedule of the accounts of such customers and creditors, and so that an independent balance of the ledger, containing only the real, nominal, special and controlling accounts, exclusive of the individual accounts of custo-

mers and of trade creditors, may be taken.

8. Define and differentiate: (a) capital and revenue, (b) capital receipts and revenue receipts, (c) capital expenditure and revenue expenditure.
9. How may the accounts in a trial balance be best arranged to facilitate the preparation of a business and financial statement?
10. Define and differentiate: (a) fixed assets and cash assets, (b) fixed liability and floating indebtedness, (c) fixed charges and operating expenses.
11. Describe the following kinds of accounts: (a) personal, (b) impersonal, (c) real, (d) nominal, (e) current, (f) summary.
12. Describe the process and state some of the purposes of analyzing a ledger.
13. Describe the nature of the following accounts: (a) sinking fund, (b) reserve fund, (c) redemption fund, (d) depreciation fund, (e) contingent fund, (f) investment fund.
14. Define the following: (a) stock, (b) capital, (c) surplus, (d) deficiency, (e) capital stock, (f) preferred stock, (g) common stock, (h) share capital, (i) loan capital.
15. Describe the nature of the following accounts: (a) merchandise, (b) construction, (c) consignment, (d) joint, (e) subscription, (f) expense, (g) maintenance, (h) venture, (i) suspense, (j) dividend.

II.

1. Describe the principal books of account of some concern with which you are familiar, and show the relation and connection of these books.
2. What various meanings may an entry in a ledger account have, on (a) the debit side? (b) On the credit side?
3. Show the advantages and the disadvantages of the

column system for books of original entry.

4. Describe the process of closing the ledger of a mercantile firm.
5. In what ways may bad or doubtful debts be disposed of at the close of a fiscal period?
6. What are the functions of the cash book? Describe the peculiarities of one or more cash books with which you are familiar.
7. In what order should the several items in a balance sheet be placed? Give reasons for your answer.
8. Describe a bill book and show its relation to (a) the bills receivable account; (b) the bills payable account.
9. How should one proceed to detect an error in a trial balance?
10. State various ways of treating the bank balance in connection with cash on hand.
11. Describe the merchandise account as ordinarily kept. Show how it may be subdivided and suggest improvements.
12. How may a set of books be changed from single entry to double entry?
13. Describe various uses of the journal.
14. What are the functions of a real estate account? What entries may it properly have on each side?
15. Describe the stock ledger (shares ledger) of a corporation and show how it is kept.

III.

1. What are the main features of difference between a trial balance taken out at the end of a fiscal year before the books of a business are closed, and one taken out immediately after the books are closed?
2. What is meant by (a) capital? (b) Working capital? Why is capital always shown on a balance sheet as a liability?
3. Formulate journal entries to express fully each of the

following transactions: (a) a sale of goods for a note bearing interest, (b) the discounting of the above-mentioned note at a bank, (c) the annulling of a personal account as uncollectable, (d) the adjusting of an interest account for interest earned but not yet collected.

4. Under what circumstances is a patent regarded as an asset? After a patent has been valued, should such value be considered as permanent? Give reasons for your answer.
5. In the opening of a ledger, what principle should be followed as to the order of arrangement of the accounts? Show the advantages of different plans.
6. Describe a set of books for a commission merchant. Show the relation of each book to the other books of the set.
7. State what is meant by a cost sheet, showing its advantages and how it is made up. Give a form of cost sheet for some manufacturing business with which you are familiar.
8. What is meant by the good-will of a business? Under what circumstances does it become important to determine the value of the good-will of a business?
9. Mention five classes of ledgers and describe the peculiar features of each class.
10. Describe the following, and state the distinguishing feature of each: (a) income account, (b) surplus account, (c) suspense account, (d) reserve fund.
11. Define (a) funded debt, (b) floating indebtedness, (c) fixed charges. May interest on floating debt properly be considered a fixed charge?
12. State cases in which leases have a value that should appear in the accounts. How should provision be made in such cases for the falling out of such value at the expiration of the leases?

13. In case of discrepancy in a trial balance, how may the accountant ascertain which side is erroneous?
14. How may the gross profit or loss on merchandise be ascertained?
15. Describe the profit and loss account. Show how this account is made up and from what accounts it is made. What does the balance of the profit and loss account represent, and how should such balance be finally treated?

IV.

1. Describe fully each of the following accounts, showing what entries may be made on each side and what disposition should be made of the balance: (a) cash account, (b) interest account, (c) merchandise account, (d) suspense account, (e) real estate account.
2. Describe the following securities and show the essential features of each: (a) common stock, (b) preferred stock, (c) income bonds, (d) debenture bonds, (e) mortgage bonds.
3. Describe the process of taking a trial balance. State the purposes of the balance and show its relations to the balance sheet.
4. Give a rule averaging the maturity of the balance of an account containing items of various dates on each side.
5. State in the form of journal entries the following transactions: (a) a note of a customer returned with protest charges from the bank where it had been left for collection, (b) the setting aside for wear and tear of a portion of the value of machinery, (c) the adjustment of interest accrued but not yet payable on a mortgage, (d) accommodation paper indorsed by the firm when coupon bonds are received as security.
6. In case of bonds purchased at a premium or at a discount, to be held till maturity, state how the price

should be disposed of on the books at purchase, at maturity and at any intervening time.

7. Formulate, in an imaginary case, the journal entry or entries for the conversion of a partnership into a joint stock company with the same resources and liabilities.
8. Describe a voucher record for the expenditures of a corporation.
9. What is meant by good-will? What kind of property is good-will? May the good-will of a partnership be sold?
10. What names are given to accounts that represent the excess of assets over liabilities? Differentiate these names in their application to various kinds of business.
11. What is the proper course of procedure in taking charge of the bookkeeping of a firm that has either no books of account or very imperfect ones?
12. Describe fully a system by which occasional small sales made on credit to persons not regular customers may be recorded without opening a separate account with each purchaser.
13. Describe the most complicated form of cash book with which you are acquainted, showing its functions, the sources from which its materials are derived and where its results are carried.
14. Describe fully the method of keeping a bills receivable account, and state the connection of the account with the bill book.
15. As the bookkeeper of a firm that had no articles of co-partnership, what would be your duty on learning of the death of a partner?

V.

1. Define debit, credit, debtor, creditor. State the general law growing out of the relationship of debtor

and creditor that governs double entry bookkeeping. What is the result of a debit entry? Of a credit entry?

2. Mention the different classes into which accounts are usually divided. Give the names of the principal accounts of each class. Which class or classes of accounts close into loss and gain account? Mention the principal accounts common to mercantile bookkeeping and state the purposes of each.
3. Define assets, liabilities. What are fixed assets, quick assets? In making up a general statement of assets and liabilities, what groups of accounts constitute assets and what constitute liabilities? State how to treat, on closing the books, assets and liabilities accrued but not actually due (such as interest receivable and payable, taxes, insurance, commissions, salaries, rents).
4. Describe the different methods of determining the loss or gain of a business. How is the loss or gain of a business determined from books kept by single entry? State the usual mode of procedure when the books are kept by double entry.
5. State the purpose of (a) consignment account, (b) shipment or adventure account, (c) adventure joint account, (d) merchandise company account. Describe how each should be opened, conducted and closed.
6. Describe the entries necessary to open a set of double entry books. In what respect is the double entry system preferable to the single entry system?
7. Describe the process of changing single entry books to double entry. What additional accounts are required? Is it necessary to disturb any accounts already opened in the ledger, or to keep such accounts differently after the change?
8. Describe in detail the manner of closing a double entry ledger. How should the results of the business

be started? Why is property unsold credited to the account to which it belongs before closing? How should worthless and doubtful debts be treated in closing?

9. State the entries necessary to open a set of corporation books so that the assets may appear properly on the ledger. What books are necessary in corporation accounting that are not necessary in mercantile accounting? What does the capital account show? Define preferred stock, common stock, watered stock.
10. State the object of each of the following: (a) plant account, (b) capital account, (c) surplus or reserve fund account, (d) redemption fund account, (e) depreciation account.
11. What should be done regarding the books on the admission of a new partner into a firm? What entry should be made when cash is invested for a certain share in the gains and losses? What entry should be made when a specified amount is paid to the old members for a certain share in the gains and losses?
12. What is understood by cost or factory bookkeeping? What is shown by the cost books? What are the principal items entering into the cost of manufactured products?
13. What is meant by the voucher system of bookkeeping? Describe the voucher record book.
14. How should executors' and administrators' accounts be stated for the purpose of filing in court? What does the summary of accounts usually include? What are assets of the estate? When are dividends, interest and rents to be treated as principal? Define an intermediate account. What is a final account? With what does the executor charge himself? For what does he take credit?
15. What is the duty of the assignee's accountant in the case of an assignment? How is the inventory stated?

What are included in the schedules? How is the assignee's account stated for submission to the court? What does the summary of account usually include? With what does the assignee charge himself? For what does he take credit?

VI.

1. State and explain the two principal purposes for which accounts are kept.
2. What important features of a business are shown by double entry bookkeeping that single entry books can not show? Explain clearly.
3. Describe the ordinary merchandise account and state its purpose. Does it fully accomplish the purpose desired? Give reasons for your answer.
4. Describe a voucher record and the process of conducting a vouchers payable system. State fully the advantage of this system.
5. Recommend, with all necessary explanations, a set of books peculiarly adapted to the use of a firm that deals exclusively in butter, cheese and eggs, at wholesale, retail and on commission, and has three branches in the same city, the books kept at the main store.
6. Define the following terms as applied to accounts: personal, real, nominal, resource, liability. Mention two real and three nominal accounts.
7. Describe the nature of the following accounts: consignment, trading, suspense, construction, subscription.
8. Formulate and explain a rule for determining whether an account should be debited or credited in any given transaction. Explain the application of the principle.
9. Describe a safe and easy system of keeping the account of goods returned, (a) as buyer; (b) as seller.
10. State explicitly and fully the function of the profit

and loss account. Distinguish between the function of the profit and loss account and that of the balance sheet.

11. Some proprietors keep a private ledger of their business, to which bookkeepers and clerks have no access. Explain the purpose of such a book, and show what accounts it usually contains and how it is made to agree with the general ledger.
12. State the theory and purpose of each of the following, and show wherein they differ: (a) reserve fund, (b) sinking fund.
13. State the general theory of the balance sheet. On what theory does the English form of balance sheet differ from the continental and American form? Give an argument either for or against the English form.
14. Define permanent assets, floating assets. Show how each should be treated in ascertaining the standing of a business at any specified time. State the theory of each step in the process.
15. Describe two forms of sales ledger and the process of entering the sales in each. Explain the advantage of each form.

VII.

1. What is meant by double entry and how does it differ essentially from single entry? Show the advantages of recording every business transaction in two or more different accounts.
2. State what is indicated by each of the following ledger accounts, (a) when the account shows a debit balance, (b) when the account shows a credit balance, loss and gain, merchandise, customer's ledger, purchase ledger, Chicago branch or agency, insurance, rent, interest, commission. Explain fully.
3. Describe a private ledger. Describe the process of opening a private ledger for a mercantile firm. What

relation would the private ledger bear to the general trial balance?

4. Define auditing, accounting, bookkeeping, and show the relation of each to the others.
5. You are required to suggest a method of bookkeeping and to undertake the annual balancing of the books of a large wholesale or jobbing establishment. What general methods in the bookkeeping would you recommend, and what plan would you adopt to expedite your work?
6. Describe a sinking fund. How should the account of such a fund be conducted in the case of a manufacturing corporation that bonds its works for $100,000, payable in twenty years, and wishes to accumulate during that period the sum necessary to retire the bonds at maturity?
7. What is a controlling account? Give an illustration of the use of such an account.
8. Show what is meant by the following terms: Closing the books, balancing the books, making out a statement, preparing a balance sheet, taking off a trial balance.
9. Describe a means for the protection of a manufacturing company in the purchase of necessary materials and supplies and in the payment for such materials and supplies.
10. State the process of making a trial balance of a single entry ledger. How may the loss or gain be determined from books kept by single entry?
11. A mercantile house draws on its customers at sight, depositing its drafts in bank. Occasionally a draft is returned dishonored. What entry should be made when a draft is drawn, and what counter-entry should be made when the draft is returned dishonored?
12. Describe a plan for handling invoices of materials

purchased for the use of a factory, payments for which are to be made at the best discount date.

13. Describe an approved system of recording and vouching petty cash transactions.
14. Give the ruling of a stock or shares ledger for a corporation. Show how this book is kept, and indicate its relation to the general books of account.
15. Illustrate a columnar cash book, a columnar journal, and a columnar sales book. What general requirements should be observed in designing such books? Give an estimate of the utility of the columnar plan.

VIII.

1. State one general rule that will embrace all the principles governing double entry bookkeeping. Define journalizing, in its broadest sense.
2. What is the result of a debit entry? Of a credit entry? Illustrate in the case of an account of each of the following classes: (a) personal, (b) real, (c) nominal.
3. State the characteristic distinctions between single entry bookkeeping and double entry bookkeeping. What are the advantages of double entry over single entry?
4. In double entry bookkeeping, why are the debits on the left and credits on the right?
5. Define the following accounting and business terms: Floating capital, fixed capital, quick assets, floating liabilities, nominal accounts, passive assets, passive liabilities.
6. In making up a business statement or a balance sheet, why are the assets placed as debits and the liabilities as credits? Are there any exceptions to this rule?
7. Describe the entries necessary to open a set of double entry books for a firm just starting in business.
8. In closing the ledger accounts of an ordinary busi-

ness for the purpose of a general exhibit of affairs, what order should be observed?

9. Define and differentiate: reserve fund, sinking fund, depreciation, surplus. Classify the foregoing as assets or liabilities and give reasons in each case. Explain the meaning of an item in suspense.
10. What is understood by the term net profit? State the final disposition of net profit in the books of a partnership; of a corporation.
11. What is a stock (or shares) ledger? Explain the nature of its records and describe the manner in which they are made. What relation does this book bear to the general books of the corporation?
12. Describe and illustrate at least three forms of ledgers adapted to customers' accounts, and state the form you prefer for some specific class of accounts.
13. What plan would you suggest for recording in the books of a large mercantile firm its contingent liabilities incurred by indorsements on bills receivable?
14. What distinction would you make in an ordinary set of books, as to debits to the merchandise account; incidental expenses of the business; losses such as bad debts, destruction of property, etc.?
15. Give a rule for averaging an account not yet due, for the purpose of settling by note.

IX.

1. Into what general classes should ledger accounts be divided? State the distinguishing feature of each class. Mention one account belonging to each class.
2. State a comprehensive general rule for journalizing. Write in your journal the entries of the following transactions and explain the application of the rule to each debit and credit: You receive from A. Truman, administrator of an estate of which you are a legatee, full titles to property as follows: warehouse on

Bond St. valued at $175,000, mortgaged to Ironclad Trust Co. for $18,000; suburban residence, valued at $8,000; 100 shares Tesla Electric Co., par value $100 a share. Three days later you convey the residence as a gift to your daughter.

3. What books of a mercantile firm should be treated as books of original entry and be posted direct to the ledger? Give an example of an entry that should necessarily be made in the journal.
4. State the different steps in the process of closing the ledger at the end of a fiscal period and give the reason for each step.
5. Explain the uses and relations of the petty cash book to the principal cash book for a jobbing house and make five illustrative entries.
6. What is the purpose of a trading account, and what general result should it show? In closing the ledger what disposition should be made of the balance of the trading account?
7. Explain the theory of good-will. On what basis should good-will be valued? Is good-will a fixed or a floating asset? Why?
8. Give a rule for adjusting partners' accounts (a) when the gains or losses are to be divided in proportion to each partner's investment and the time it remains in use; (b) when the proportion of gain or loss is fixed and interest is calculated on excess or deficit of capital.
9. What books besides such as are used by individuals or firms are necessary for recording the transactions of an incorporated company? State briefly the use of each book mentioned.
10. How should inventories be treated in closing the ledger at the end of a fiscal period? Is the common practice of adding the inventory of goods on hand to

the credit side of the merchandise account theoretically correct? Explain.

11. Mention four items of information in addition to those usually shown in the books of a mercantile business which should appear in a set of books for keeping the accounts of a factory. Give reasons for your answer.
12. What class of expenditures should be treated as assets at the close of a fiscal period?
13. Define the following items as used in factory accounting: cost of production, prime cost, general charges, maintenance, stores, stock, stock debit note, storekeeper, writing off.
14. What is meant by the surplus, or surplus fund, of a stock company? How is this fund formed? What is its purpose?
15. Describe a method of keeping the accounts of an executor and state what books are necessary for the purpose.

X.

1. Explain the theory of double entry bookkeeping, and state the principal advantages of the double entry system.
2. Into how many classes are ledger accounts usually divided? Mention two of the principal accounts of each class, and state the purpose of each.
3. Define current assets, current liabilities. Give two examples of each.
4. Define capital, nominal capital, subscribed capital, paid-up capital, good-will.
5. Define the following terms: balance sheet, reserves, items in suspense, surplus, impairment.
6. Describe the merchandise account and its use. State how it should be used in (a) a jobbing or wholesale grocery business, (b) a department store such as that

of Wanamaker or of Siegel-Cooper Co., (c) a manufacturing firm making agricultural implements.

7. Describe the process of changing a set of books from single to double entry. Draft an example.
8. What is the purpose of a private ledger? What accounts are usually kept in the private ledger?
9. What difference, if any, should be made between the accounts of a firm and the accounts of a corporation in the same line of trade and doing about the same amount of business? Explain.
10. In preparing accounts for a manufacturing company, on what principle should expenses be divided as between the manufacturing account and profit and loss? Give examples.
11. In designing a set of accounts for a business, how might provision be made for a constant showing of the aggregate sum owing by customers and the aggregate sum owing to creditors, without the necessity of preparing a schedule of the accounts of such customers and creditors?
12. In making up the cost accounts on goods produced by a factory, what items of expenditure are to be considered? How should these be combined to show the actual cost of any specified product?
13. Draft a form of cash book to be used where all receipts are deposited in bank and all payments are made by check. Illustrate the use of this book by three or more entries.
14. What is meant by a consignment account? How should a consignment account be stated in a balance sheet?
15. From what accounts is a profit and loss account prepared? In what way is its accuracy proved?

XI.

1. Robinson & Co., wholesale dealers in notions, whose

books have not been kept by double entry, wish to improve their system of bookkeeping. Write a brief report advocating double entry, setting forth the superiority of that method generally, and showing by specific references to the mode of bookkeeping employed by them, the advantages that will accrue from the change.

2. Your suggestions (see Question 1) as to a change of method having been approved by Robinson & Co., you have been instructed to make the change at the close of the fiscal year; state in detail how you would proceed from start to point of proof.

3. By analysis the debit side of merchandise account shows purchases $60,000, returns to us $4,000, entries offsetting errors in sales extensions $2,000, trade discounts to customers $13,500, balance profit $27,000, the credit side shows sales $90,000, returns by us $5,000, allowances to us $1,500, inventory at close of year $10,000. Suggest such change in the method of recording the foregoing statement as would readily show (a) net amount of purchases, (b) net amount of sales, (c) percentage of profit.

4. State generally how the books of a firm doing a manufacturing business would differ from those kept by a trading concern as to (a) books of record; (b) ledger accounts.

5. What differences in books and accounts would exist between a partnership and an incorporated company carrying on a similar business?

6. State the scope and value of the trial balance. In case of failure to prove, how would you proceed to locate the difference?

7. The building of an insurance corporation valued at $500,000 is mortgaged for $300,000. The rental value of the portion occupied by the corporation is $3,500 a year, and there are sixty other tenants in the build-

ing. Mention such accounts as should be kept and state the class of transactions to be recorded in each. In what manner and to what extent would the building enterprise be included in the annual financial statement of the corporation?

8. Outline a statement of assets and liabilities and an annual statement of operations of a manufacturing corporation. State how you would treat each of the following items: (a) interest paid in advance not fully earned, (b) insurance unexpired, (c) interest accrued, (d) outlay of labor and material on goods not fully manufactured, (e) material to be delivered to complete contracts up in full, (f) depreciation of plant, (g) provision for future losses on present outstandings.
9. Describe the following accounts and state where and how they are employed: surplus, good-will, treasury stock, maintenance, suspense, dividend.
10. In a statement of a railway corporation, what is meant by fixed charges, funded debt, floating indebtedness, maintenance of way, maintenance of equipment?
11. What is the best way of recording customers' notes so that the true condition of each account may be shown? What is the most approved way of treating the note receivable account (a) in the ledger? (b) In a statement of affairs?
12. Arrange a plan for keeping a private ledger with which the general ledger will agree and yet in no way reveal the contents of the private ledger. What matters are usually recorded in the private ledger?
13. Suggest one or more plans by which an inventory may be corroborated or impeached.
14. Describe several economies in accounting made possible by the introduction of special columns in books of original entry.
15. State the full procedure leading up to the entry of

the following transaction in the shares of a corporation, the par value of which is $100: April 5, 1901. James Williamson receives certificate No. 75 for 100 shares full paid. May 3, 1901. James Williamson requests a transfer to George T. Jenkins of 30 of his 100 shares. Outline a form of stockholders' ledger and properly enter the above items therein.

XII.

1. On what general principles is double entry bookkeeping based? State briefly a general formula for the correct recording of business transactions.
2. Two persons exchange with each other their respective notes for $1,000 each; what would be presumably the object of such exchange? What are the risk and the limit (in amount) of risk of each party to the transaction? How should such a transaction be recorded?
3. A retail book store agrees to deliver certain sets of books at $20, on payment of $2 down, the purchaser agreeing to make $3 payments for each of the six months next following. It is expected that sales on this plan will aggregate several hundred sets. Suggest a method of keeping the accounts, so that results may be readily shown.
4. Give all the stages in closing the books of a mercantile corporation from the time they are fully posted to the completion of the financial statement.
5. Describe several methods of recording discounts on accounts as paid, avoiding misstatement of receipts and disbursements. State the advantages or disadvantages of the methods proposed.
6. Outline an entry recording bond interest due but not paid at time of making the entry. What are the advantages of such an entry?
7. Mention other items which could be treated in a way

similar to that suggested for interest in question 6 and state the advantages of such treatment.

8. Give several methods of keeping the records of petty accounts with infrequent customers.
9. What should be the procedure in stating the value of stock on hand at the time of a fire, the financial books being intact and showing the amount of an inventory taken four months previous to the fire?
10. Give cases where it is proper to include in a statement of assets and liabilities certain receipts and disbursements not occurring in the period under review.
11. On what are the accounts of an executor based? In preparing his account, with what does the executor charge himself and for what does he claim credit?
12. How should entries be made of notes receivable in the account of a customer whose credit is limited to a fixed maximum, so that his account will show at all times the amount for which his order may be accepted?
13. How should entries be made of the discount at the bank of notes received under circumstances outlined in question 12? What entry should be made as the notes are paid at maturity?
14. State cases where the condition known as "diminishing assets" is likely to arise. How should such cases be treated?
15. You are called on to assume the duties of general clerk and bookkeeper in an establishment where the accounting has been very meager and primitive; state the steps that you would take to reform existing conditions.

SECTION B.

ACCOUNTING TERMINOLOGY*

The accounts of American states and of the "city corporation" of the larger municipalities are readily separable into two groups: (1) The accounts kept by the general fiscal officers, such as those called treasurers, auditors, or comptrollers, for the state or city as a whole; and (2) those kept by the executive officers of the several divisions of the Government for their departments, bureaus, or offices. The accounts last mentioned differ radically from those kept by the fiscal officers first referred to, and no description of or statement concerning accounts belonging to the first group is applicable to those included in the second; hence in any discussion of governmental accounts the two groups should be carefully differentiated, and statements concerning governmental accounts should specifically set forth the group to which reference is made. To facilitate this differentiation accounts kept by the treasurer, auditor, or comptroller for the state or city as a whole are here called general accounts, and those kept solely for or by individual departments, bureaus, or offices are called departmental accounts.

Accounts of Proprietors and Trustees.—The accounts ordinarily used in private business at the present time are of two distinct types, according to the nature of the business for which they are devised and installed. The most common type is that employed by corporate and indi-

* From Statistics of Cities, U. S. Census Office.

vidual enterprises which are conducted primarily for profit or gain, and whose accounts are records of the rights or interests, liabilities, gains, and losses of the proprietors; while the other type of accounts is employed by corporations and individuals engaged in administering the affairs of others and not of themselves. Accounts of the first type are called by Mr. Charles E. Sprague, in "The Philosophy of Accounts," proprietorship accounts; and those of the second, fiduciary accounts. The business of many individuals and corporations includes transactions for the benefit of the proprietor and for the benefit of others. In such cases, the principal accounts are always proprietorship accounts, while the others are in reality fiduciary in character.

All departmental accounts of governments are fiduciary in character and constitute the best examples of fiduciary accounts to be met with either in governmental or in private business. They show on one side the amounts of money or credit placed at the disposal of the department, bureau, or office, and on the other (1) the expenditures made; (2) the reservations of the appropriations for contracts, market orders, or other purposes; and (3) the free or unencumbered balances of the appropriations.

The general fiscal officers of our American states and municipalities are required to keep fiduciary accounts with appropriations. In addition, they must keep accounts with other financial data relating to revenues, the receipt and payment of cash, public properties, and indebtedness. The general accounts of most cities with their appropriations are not combined with, nor even closely associated with, the accounts last mentioned, although in the accounting systems of a few cities the two classes of accounts are combined under appropriate controlling accounts. The general appropriation accounts of the cities of the former class are duplicates of the departmental accounts, and, like them, are models of fiduciary accounting. Of the cities

which combine the two classes of accounts the greater number employ fiduciary accounts of a type that originated in the earlier stages of governmental business. A smaller number employ fiduciary accounts so arranged as to make them of greater administrative value, and a few are installing proprietorship accounts. Experience will be required to determine the relative administrative value of the different systems of accounts mentioned.

Differences in General Governmental Accounts.—In addition to the differences above mentioned, the general accounts of American cities vary greatly in character, in methods, and in the bookkeeping devices employed, of which but few are to any extent common to the different cities, and fewer still are universally used in private business. In some cities, the only books of general accounts are those of the treasurer; in others, additional general accounts are kept by the comptroller or by whatever other officer exercises the duties of a comptroller or auditor. In the great majority of the cities of the latter class, the books of the comptroller are in some of their essentials the same as those of the treasurer, and include accounts with the treasurer, which are a check upon his transactions. The accounts of both officers have one feature in common with the accounts of private enterprises, in that they always record the flow of cash into and out from the treasury. Moreover, they record this information by methods that are primarily devised to show whether any of the money received is lost or is applied to purposes other than those contemplated by the legislative bodies authorizing its collection and expenditure.

The fundamental differences in the general accounts of American cities have the same origin as the corresponding differences in the accounts of private enterprises, in that they arise from the varying uses to which the accounts are applied in the administration of business. At first governmental as well as private accounts were largely

records of debts—the amounts owed to a government or private proprietor and the amounts owed by it or by him. The accounts were kept for the administrative purpose of assisting in collecting all amounts due and of meeting all obligations when the same matured. A step forward was taken in private business when accounts were arranged, kept, and summarized in such a way that in addition to providing the information already obtained from the earlier records they embodied all the fundamental requirements of modern accounting for proprietorship by disclosing the condition of business at specified times, and the gains and losses for specified periods. Similar progress was made in accounting for constitutional governments when their general financial records were so arranged that, in addition to recording all the data included in the earlier accounts, they introduced all the requisites of correct fiduciary accounting by exhibiting the cash and other resources available for expenditure at any given time, and the fidelity with which expenditures have been made in conformity with the terms of appropriation acts.

Modern Administrative Uses of Accounts.—Within the last fifty years accounting has become in most countries a distinct profession, and accounts are now applied as administrative aids both to private and to governmental business in ways never dreamed of by former generations. The earlier accounts, to which attention has been called, have not been neglected or displaced, but have assumed their position in more comprehensive schemes introduced by the most progressive private and public administrators.

The modern innovations in accounts are those which provide for the classification and analysis of financial data and their arrangement in statistical forms so as to show, in private business, when and how money is gained and when and how it is lost; and to disclose and measure in governmental business the relative efficiency and economy of every branch of service. In private business, an analy-

sis of revenue is made in order to determine the adequacy of rates for various services and commodities, and every factor of business administration is brought under accounting control by means of what the business world now knows as "cost accounting." It is by such methods that the leaders in modern private business have made accounts and accounting of supreme administrative assistance in avoiding bad and securing good financial results. Their accounts are the ideal ones of the business world, and demonstrate the great part that accounting records can play in securing success and avoiding failure. In like manner, a few governmental officials have introduced general and departmental accounts which accomplish for nations, states, and municipalities what the analytical and statistical accounts above described accomplish for private enterprises. Their accounts are so arranged as to provide adequate accounting control over revenue, to aid in preventing waste or loss thereof in collection, and to apply the principles of private cost accounting for the purpose of testing the efficiency and economy of all branches of governmental service.

In passing, it should be said that only a limited number of private concerns have developed and applied accounts of the largest possible administrative value, and in like manner only a few governments and governmental officials have shown themselves fully awake to the value of accounts as aids to good government. Hence there are great differences in the administrative uses to which governmental accounts are applied, and, as an inevitable result, great differences in the economy and efficiency of local governments. This condition will continue until, with other changes and reforms, the general and departmental accounts of all cities are so arranged as to measure and test the efficiency of governmental administration, as well as the fiduciary responsibility or accountability of municipal officers. To attain fully the results here mentioned,

the accounts of different governments of the same class—as those of states, counties, cities, and towns—must be arranged on such bases as will readily permit the experience of each to be compared with that of all the others.

New Systems of American Governmental Accounts.—A considerable number of American cities, actuated by a desire to make their financial records of as much administrative assistance as are those of the most progressive private enterprises, have within the last ten years introduced new systems of general accounts. The great majority of these systems can best be described as experimental or tentative, since they are being applied to a field hitherto undeveloped by accountants. There is no uniformity in the systems thus introduced, and their value must be measured by standards other than those of uniformity and the possibility of comparing the expenses and outlays of one city with those of others. The experience of the several cities introducing these new accounts has, however, on the whole, been fruitful of much good, and out of it no doubt will soon be evolved systems of accounts which will give to governmental officials and the public interested in governmental affairs the same aid that the most successful business man secures from the accounts of his private business.

The general accounts thus far introduced may be said to be of two distinct types: One in which the principal or controlling accounts, in addition to those with appropriations, are those with cash receipts and payments, here spoken of as accounts based on cash transactions; and the other, in which they are accounts with amounts accruing, as revenue or otherwise, to the benefit of the city, and with the accruing expenditures of the city, here referred to as accounts based on accruals. Accounts of the former type are the more numerous. That fact, and the further fact that the older forms of general accounts, still in use by the majority of cities, are of the same type, compels

the Bureau of the Census to arrange its statistics upon the basis of cash receipts and payments.

Comparable Statistics, How Secured.—A limited number of cities employing the older forms of general accounts, and some of those which have installed improved accounts of the type first mentioned above—that is, accounts based on cash transactions—prepare exhibits of receipts and payments in such a manner as to permit comparisons of their costs of government with those of other cities. These cities make use of accounting for the purpose of measuring the efficiency and economy of administration to a larger extent than do any others. The financial statistics contained in this report are arranged on a basis which, in its essentials, is identical with that employed by such cities. So far as these statistics realize the object for which they are prepared—the object set forth in the opening paragraph of this introduction—they become of assistance in providing accounting tests and measures of the efficiency of the administration of American cities. They secure this result by employing accounting devices which have been introduced by many municipal fiscal officers, and which consist of more or less detailed exhibits of receipts classified by source and of warrant payments classified by object. The classification of these receipts and payments into real or actual, and nominal, and the subdivision of real or actual receipts or payments into those which are and those which are not available for meeting the costs of government, furnish an approximate statement of the cost of operating the government of a city and of maintaining its several functions; and if all the bills are presented when due and are settled at once by the issue of warrants to be paid in the immediate future, such a classification also shows the relation between warrant expenditures and receipts.

In some cities, however, large numbers of warrants or orders having the authority of warrants, are paid in a year

subsequent to that of issue. In such cities, the problem of securing from the books of the treasurer or comptroller a statement of the cost of governmental operation and maintenance and of expenditures for the acquisition or construction of permanent properties is more difficult. Under such conditions the classified exhibit of the treasurer's transactions may show for one year no payments for the support of a certain function, as the police or the schools; while for the next year it may show disbursements twice as great as the actual cost of maintenance. In such cities, the aggregate of warrants drawn in settlement of claims more nearly represents the cost of governmental operation and maintenance and the expenditures for permanent properties than does the aggregate of warrants paid. Yet a tabulation of warrants drawn, combined with a statement of receipts, does not furnish a complete exhibit of the financial transactions of a given year, for the reason that it does not include a statement of the warrants or bills payable drawn in previous years but liquidated during the current year. Hence, from the standpoint of governmental accounting, such a presentation is as imperfect as would be a trader's accounts from which were omitted outstanding liabilities for merchandise purchased. To make an approximately complete exhibit, for a given fiscal year, of the financial transactions of cities of the class referred to in this paragraph, not only must the comptroller's record of warrants drawn during the year be presented, but also the treasurer's statement of warrants paid or liquidated during the year must differentiate the amounts paid on warrants outstanding at the beginning of the year from the payments made on those drawn during the year. On this basis the census statistics of payments and receipts of cities are compiled.

Need for Uniformity in City Accounts and Reports.— The compilation of comparable financial statistics of cities is at the present time attended with many difficulties and

large expense, owing to differences in the accounting systems and methods of the various cities. The movement toward the uniform classification of payments and receipts inaugurated by the National Municipal League gives promise of a reduction of these difficulties and of the accompanying expense. The publication of the census reports presenting the financial statistics of cities has given the movement a great impetus, but the publication of these reports will not alone suffice to render easy of attainment comparable financial statistics of cities. Before that end can be secured, accountants and governmental officials must reach some common understanding as to the fundamental principles of governmental business and accounting, as accountants have already done with reference to the fundamental principles of commercial accounting. That result can be secured only as the outcome of study and intelligent discussion of these principles.

Need for Correct Methods of Conducting Municipal Business.—Uniform accounts and reports, if secured as outlined above, will be of great assistance in compiling comparable statistics that will measure the relative economy and efficiency of city governments. Such accounts and reports alone will not, however, provide the data for the desired statistics. Before such statistics can be compiled, city governments must not only establish uniform accounts and make uniform reports, but they must also adopt correct and uniform methods of transacting their financial business. Mention has been made of the difference between exhibits of governmental expenditures based respectively upon warrants or orders issued and upon warrants or orders paid; that difference is material, but as a factor in modifying the comparability of the statistics obtained for the different cities it is eliminated by the method adopted by the Bureau of the Census and already described. The same cannot be said concerning an inaccuracy that arises in the census exhibit for cities with

certain faulty business methods, and with no proper business system of auditing bills or issuing warrants. In some of these cities, bills are in reality audited by approval of the city council, some being audited promptly when presented, while others are not approved until a considerable length of time thereafter. Similar variations in the time elapsing between the presentation and the audit of claims occur in other cities having auditors or comptrollers with nominal powers of adjusting all claims. In neither case are warrants or audited bills for a given period true exhibits of the costs of government for that period, so that whether exhibits of governmental expenditures are based upon warrants issued, as are those now compiled by the Bureau of the Census, or upon audited bills, the statistics for such cities will fail to be comparable with those for other cities which have adopted correct business methods. This condition of affairs will continue until cities are compelled by state law—if they will not do so by their own initiative—to employ business methods of auditing bills when due, and to pay those bills promptly by the issue of warrants on the treasury. Such an improved method of conducting the finances of cities would accomplish two very important results—it would render possible the compilation of statistics which would measure the relative efficiency and economy of municipal administration, and at the same time eliminate one of the most potent single factors in governmental graft and dishonesty.

Need for a Common Terminology in Accounting.—The subjects of correct and uniform accounting and of improved business methods for cities and their industries, and for public service corporations under national or state supervision and control, are of great popular interest, and many accountants, economists, governmental officials, and public writers are giving them earnest thought. The average accountant is, however, of necessity, devoting most of his attention to improving the methods of accounting and

business administration in accordance with his own ideas; he is working out his own schemes without seeking the co-operation of others. The result is that, while better accounting and more efficient business methods are being introduced both in publicly and privately owned enterprises and in governmental business as a whole, the country is not securing uniformity as rapidly as is desirable.

Uniformity in systems of accounting must be based upon a common language of accounts—that is, upon the use of a common terminology. To aid in securing that uniformity, the schedules and schemes of accounts should be accompanied with definitions of each accounting term employed, and the reason for adopting that term, where the usage of the commercial world and governmental world is not uniform. The publication and discussion of such definitions and explanations will open the way for the final selection of those terms which are best adapted for securing improved and uniform governmental accounts and reports.

Accounts.—Accounts are exhibits of financial transactions with individuals—natural, corporate, and governmental—and of financial data relating to various subjects, set forth by counter entries called debits and credits.

Accounting.—Accounting is the art of applying accounts as aids in the administration of business, or the science of analyzing, recording, and summarizing data relating to business in such a way as to disclose its condition or state at any given time, to express the results of its operation for any given period, and to furnish all other information that such analyzing, recording, and summarizing can provide for its systematic and most successful administration.

Attention has already been called to the progressive development of this science and the application of its principles in the fields both of private and of governmental business, and to the two different types of general govern-

mental accounts employed at the present time by American cities. In general accounts of the type most frequently used by governments in the United States—accounts based on cash transactions—the principal or controlling accounts supplemental to the appropriation accounts are those summarizing the receipts and payments of cash, while in general accounts of the other type—accounts based on accruals—the corresponding controlling accounts are those summarizing amounts accruing for the benefit of the Government and those summarizing the accruing expenditures of the Government. Notwithstanding this difference, the two types of accounts, if they are to be of equal administrative assistance, must record and summarize substantially the same facts and deal with the same accounting entities. Under such circumstances uniformity in the use of accounting words and phrases will contribute much to the value of accounts of both types, and render the accounts of each type more intelligible to those employing accounts of the other type. Attention is first called to the financial data that must be included in a correct and complete summary of governmental financial conditions and to the definitions of the terms commonly employed by the Bureau of the Census in speaking of those data.

Assets.—The assets of an individual corporation or government are the properties or wealth—including rights of action, franchises, good-will, and other rights having a money value—in its possession or control or at its disposal. The term is employed with the significance stated in fiduciary accounting as well as in accounting for proprietorship.

Economists, in speaking of wealth used for productive purposes, or of the wealth represented by the assets recorded in the proprietorship accounts of gainful enterprises, always use the word "capital." The same word is sometimes employed as an accounting term in referring to the wealth last mentioned, but should never be used

in referring to the wealth in the control or custody of an individual, corporation, or government as trustee.

Classification of Assets.—In accounts, assets are always represented by debit entries and balances. Some of the debit entries and balances in the asset accounts of corporations and governments represent wealth actually in their possession or control, or at their disposal; and others represent the claims of one division or branch of the business or service upon another, or are in other ways offsets to the credit balances of liability, capital stock, surplus, revenue accumulation, or other accounts, being amounts recorded in so-called asset accounts to assist in securing accounting control over governmental appropriations or for other purposes. The amounts represented by the first class of entries are here called actual assets to distinguish them from those represented by the second class, which are here called nominal assets. Nominal assets which consist of wealth not now in the possession or control or at the disposal of an individual, firm, corporation, or government, but which under certain conditions may come into such possession or control, or be placed at such disposal, are generally called contingent assets.

When classified according to their relation to the principal purposes of the business in which they are used, the actual assets of private enterprises, governmental departments, and governments are given the specific designations of current, invested, and fixed assets.

The current assets of a governmental department, bureau, or office are the amounts of money which by the terms of appropriation acts or ordinances it is authorized to expend, while the current assets of a government are the resources or wealth which have been acquired or provided for meeting the cost of those materials and services which constitute its current expenses, interest, outlays, and investments, and for meeting all other claims of creditors and trust beneficiaries that mature or become due dur-

ing any given fiscal period. The current assets of government include cash, materials and supplies, authorized but uncollected revenues, prepayments, advances, and accounts and bills receivable. The accounts of most governments with their current assets include considerable amounts of nominal assets in the form of uncollectible revenues not properly written off. All other amounts recorded in such accounts representing actual wealth in their possession or control constitute their "current assets."

Invested assets, or investments, are those resources or forms of wealth which have been acquired and are held by private enterprises and by governments for purposes other than those for which they were organized and are maintained. Among the many purposes for which investments may be acquired and held are those of securing an income from their use, of deriving gain from their rise in value, of avoiding losses that otherwise would be suffered, and of securing other business advantages that may seem possible through their acquisition and possession. The principal nominal invested assets recorded in American governmental accounts are the debt obligations of the Government held by its sinking funds and other funds with investments. All investments other than the securities above mentioned are "actual investments" or "actual invested assets."

Funds is a common designation of the invested and current assets of governments. They are the amounts of money or other forms of wealth devoted to or available for specified purposes. Governmental funds are of three classes—general, special, and trust.

A general fund is one that is not specifically limited as to the source from which its stock of wealth or resources is derived, nor as to the object for which that stock may be disbursed. It is a fund that includes money or other forms of wealth which is derived from many sources and which is to be expended for many objects.

A special fund is one whose assets or resources are derived from a specified source or are to be applied to a designated object.

A trust fund in private business and accounts is a fund the legal title of which is vested in a trustee who holds it subject to the rights of others to enjoy certain benefits arising therefrom. In governmental business and accounts, where all funds may be considered as "trust funds," as above defined, a trust fund is a "special fund" whose assets consist of wealth held for non-governmental uses, or wealth obtained by donations or grants for specified governmental uses.

To constitute a governmental special or trust fund, the resources or assets belonging thereto must be separated from the body of other assets or resources, and accounts must be kept showing all facts relating to the acquisition, present status, and disposition of such resources. Governmental assets separated from other assets and held for specified purposes in such manner as to constitute a special or trust fund, are said to be "reserved," and are therefore called reserved assets or asset reserves, and the funds are frequently spoken of as "reserve funds."

Accounts with general, special, and trust funds are properly spoken of as fund accounts, and each receives a specific designation according to the character of the fund and the purposes for which its assets are reserved.

Cash.—The money and bank credits belonging to an enterprise or government are generally spoken of as cash. "Cash" set apart in trust and other special funds for specified purposes is here spoken of as trust and special cash, or reserved cash. All other cash is called general fund cash or general cash.

For a statement as to the nature of the current assets here spoken of as "authorized but uncollected revenues," see a later page under "revenues."

Materials and supplies is the general designation em-

ployed by accountants for all tangible things in the possession of a government or an enterprise which have been acquired and are held by it for consumption in operation or construction, or for sale.

Prepayments are amounts of money, or money's worth, which have been expended in meeting costs which are properly chargeable as expenses or interest of the future and not of the present or the past.

Advances are amounts of money, or money's worth, placed in the hands of fiscal officers or agents to be disbursed in meeting expenses, outlays, and indebtedness, or for making investments in the future.

Bills receivable are amounts of money, or money's worth, due from individuals, corporations, or governments for the payment of which formal acknowledgments in writing are held, while accounts receivable are similar amounts due for which no such acknowledgments are held, and which are represented principally or solely by entries in current accounting records. In governmental accounting, bills and accounts receivable should be carefully distinguished from uncollected revenues.

Fixed assets are those resources or forms of wealth employed in the accomplishment of the principal purposes of private enterprises or of governments which have an expectation of life in service of more than one year. The fixed assets of governments include those forms of wealth used for governmental purposes which are generally called properties, street improvements, and sewers.

Properties is the designation here employed by the Bureau of the Census in referring to land used for governmental purposes other than for highways, to buildings and other more or less permanent structures on such land, and to furniture, tools, apparatus, and other equipment having a life in service of more than one year, other than hand tools and other small portable tools which may be lost or stolen and of which no accounting record is kept.

These properties are further classified as productive or non-productive. Productive properties include lands, buildings, structures, furniture, tools, and apparatus and other equipment of governments that are used in connection with the operation of public service enterprises. All other properties of governments are spoken of as non-productive.

Street improvements is a designation used by the Bureau of the Census in speaking of the land employed for highway purposes belonging to governments, and the structures and improvements upon such land, including the pavements, sidewalks, curbs, bridges, tunnels, grades, and fills for highway purposes. Under the term sewers are included not only the structures bearing that name, but all such structures as manholes, catch basins, etc., forming parts of the sewer system.

When the accounts of governments with "properties," "street improvements," and "sewers" are properly kept, those accounts always record "actual assets." When, however, through imperfect accounting procedure the accounts assign to the properties, street improvements, sewers, etc., values greater than the actual cost of reproducing them in as good condition as they exist, the excess values recorded are "nominal assets."

Asset Accounts.—When a government employs the type of general accounts here designated "accounts based on accruals," the controlled accounts, other than those with appropriations, include, in theory at least, a record of all the assets above mentioned. It is quite otherwise with "accounts based on cash transactions." The controlled accounts on that basis seldom include a record of any assets other than cash and investments. All other assets, if recorded, are, in the great majority of cities using accounts based on cash transactions, recorded in what are generally known as "supplementary or uncontrolled accounts." In both types of accounts the term "asset ac-

counts" is applied to the controlled accounts in which assets are recorded.

A study of the asset accounts of a large number of American cities leads the officials in charge of the census statistics of cities to the conclusion that proper accounting for assets may be secured with either type of accounts, and that the use of neither type necessarily does away with faulty accounting. Very few cities, whatever the type of accounts which they employ, have any trustworthy record of the cost or present value of their "properties," and a smaller number have any intelligible or trustworthy exhibit of the original cost of their "street improvements" and "sewers," or of the present cost of reproducing them, and few have any definite statement of the probable amount to be realized from their uncollected revenues. So long as this state of affairs continues, the accuracy with which the asset accounts of any given government record the actual assets of that government will measure the administrative value of those accounts far better than the mere fact that the accounts are kept on the basis of cash transactions or of accruals.

In passing, it should be noted that considerable progress has been made in this branch of accounting during the last few years. The Bureau of the Census has continuously emphasized the importance of having correct information with reference to the value of governmental properties, street improvements and sewers, etc. As the result of this action, it has been able each year to make its statistics of the value of governmental properties more trustworthy than those of any previous year, although even now they are confessedly far from perfect. The Bureau of the Census, however, has not included in any preceding report statistics of the value or cost of street improvements and sewers, since it has not in previous years deemed the data obtained with reference to these subjects sufficiently trustworthy to warrant publication. For a similar

reason it has hitherto omitted all statistics of uncollected revenues. A correct statement of cash and investments can be made without any exhibit of properties and street improvements and sewers, but summaries of financial condition, which include on their debit side only exhibits of the two classes of assets above mentioned, are not complete statements of governmental financial condition. They are, however, of far greater administrative value than more pretentious summaries of financial condition, which include incorrect statements of the actual value of the several classes of governmental resources. The first requisite in this field is a correct exhibit of assets, so far as any presentation of their value is given at all. The extension of accounting control over fixed assets may therefore with profit be deferred until correct statements of their value have been prepared.

Liabilities.—In law, liabilities are primarily the obligations and responsibilities of individuals, corporations, and governments to pay, deliver, hold, use, or expend money, or money's worth in the form of land or goods, or to render specified services. The term is also used in speaking of amounts of money, or money's worth in the form of land, goods, or services which individuals, corporations, and governments are under obligations to pay, deliver, or render, or for whose use, payment, or expenditure they are responsible.

Classification of Liabilities.—In accounts, liabilities are represented by credit entries and balances. The greater number of such entries and balances in the liability accounts of enterprises and of governments represent the legal liabilities or actual liabilities above described, which are in a broad, general way separable into two classes called debts and trusts, or debt liabilities and trust liabilities. These liability accounts also contain the record of amounts which represent neither debts nor trusts, but constitute what are here called nominal liabilities.

Debts.—In law, debts or debt liabilities are primarily the obligations of individuals, corporations, and governments to pay or deliver money, goods, or other wealth to specified parties, their heirs or assigns, or to perform or render specified services of a money value in their behalf or at their behest. The term is also applied to amounts of money, or money's worth, which have been received and must be paid or delivered as stated. Those receiving and owing the money are called "debtors," and those to whom it is payable are called "creditors."

Debts or debt liabilities may be classified upon many different bases, and thus may be given many specific designations. Classified according to the provisions made for their payment or liquidation, they are called current debts, funded debts, and floating debts; classified according to the time when due or payable, they are called due and demand liabilities, liabilities not due, and liabilities awaiting final determination or adjustment; and classified according to the character of the instruments or records which evidence the debts, they are called bonds, notes payable, warrants payable, audits payable, and accounts payable.

Current Debts.—The current debts or current debt liabilities of an enterprise for gain are those that should be met from its current revenues; the current debts or current debt liabilities of a government are those debt liabilities for the payment or liquidation of which provision is fully made by cash on hand, by revenues accrued or accruing, or by other assets provided and appropriated for that specific purpose.

Funded or Fixed Debts.—The funded or fixed debts, or funded or fixed debt liabilities, of a private enterprise or of a government are those debts evidenced by some formal instrument, or in some other manner, which have a number of years to run or upon which interest is to be paid in perpetuity, but for the amortization of which no assets other than those of sinking funds have as yet been

specifically authorized or appropriated. Originally the term "funded debts" was applied only to those debts for whose amortization sinking-fund provisions had been made, but at present the term is used more or less interchangeably with that of fixed debts in speaking of the debt obligations specifically mentioned above.

Floating Debts.—The floating debts or floating debt liabilities of an enterprise for gain are those liabilities which it has incurred for meeting current costs of operation, but for the liquidation of which it has no available resources; the floating debts or floating debt liabilities of a government are those debts for the payment or redemption of which there is no money in the treasury specifically designated or appropriated, nor any provision made for obtaining such money by taxation or otherwise.

Current, funded, and floating debts constitute due and demand liabilities, liabilities not due, and liabilities awaiting final determination or adjustment, according as they are payable on demand, at the present time, or at some future time, and according to whether the amount payable has been determined or adjusted or is awaiting such determination and adjustment.

The term bonds is more or less generally applied to all written evidences of governmental indebtedness given under the seal of the nation, state, or municipality issuing them. Less formal written evidences of indebtedness are most frequently referred to by the specific designations of notes payable, warrants payable, and audits payable, while the amounts recorded only in accounts are generally called accounts payable.

Trusts.—In law, trusts or trust liabilities are primarily the obligations of individuals, corporations, or governments to hold, use, or expend money or other wealth in the interest of specified persons or for specified purposes or objects. Those receiving money or other wealth in such interest or for such purposes become "trustees" and not

"debtors," while the persons in whose interest or behalf the money is held, used, or expended are known as "beneficiaries."

Trusts are of many kinds, which may be grouped into two general classes: (1) those obligations or responsibilities which are strictly called trusts, and (2) those obligations or responsibilities in the nature of trusts which are involved in the relations of agents and principals, of the executors and heirs of an estate, and of assignees and the creditors of bankrupt estates, etc. The trusts belonging to the first class are of two kinds, private and public.

Private trusts are trusts which concern individuals and families and are limited in duration. They are obligations and responsibilities to hold or use specified amounts of money or other wealth in the interest of specified individuals, or to expend the same in their interest or at their behest. In accounting, private trusts are amounts of money, or its equivalent in the form of land or goods, held for the benefit of specified persons or to be expended in their interest or at their behest.

Public or charitable trusts are trusts which are constituted for the benefit of the public at large, or of some particular portion of this public answering to a particular description, such as the poor, children, etc. They are obligations and responsibilities to expend specified amounts of money or other wealth for specified objects and purposes, or to hold the same for such objects and purposes. In accounting, public trusts are amounts of money or other wealth which are held for the benefit or in the interest of an uncertain and sometimes fluctuating body of persons, such as the poor, or the children, or all the people of a given town or city.

Governmental Trust Liabilities.—The obligations of the government to its creditors constitute its debts. The classification of those obligations and the designations applied to them have already been presented. These debts

constitute claims or demands upon the Government, but they are not the only claims upon the Government. The other claims and demands upon the Government are those represented by private trusts and by public trusts for non-governmental uses. The most common of the latter class of trusts are those created by the acceptance of money by cities for the care of private lots in cemeteries and for the support of specified churches. These trusts are by some states classified as private and by others as public. But whether legally designated "private" or "public" trusts, the creation of the trust for one of the purposes specified, like the acceptance of money for the purposes of private trusts, creates claims upon the Government which, like the claims of creditors, are properly recorded under the legal designation "liabilities." The several classes of these governmental trusts creating claims upon the Government should be recorded under descriptive titles which will exhibit the character or the nature or purpose of the claims which they represent.

Nominal Liabilities.—In accounting, the term "liabilities" is universally used, not only as the common designation of legal debts and trusts, but also in referring to (1) amounts of money or other wealth which a private enterprise or government owes to one of its funds, or which one branch of its business owes to another branch; (2) amounts recorded in so-called "liability accounts" which represent accounting offsets to the debit entries of asset accounts, being amounts recorded in accounts to assist in securing accounting control over specified contract obligations, such as those for maintaining sinking fund reserves, or for other accounting purposes; and (3) amounts which the enterprise or government may, under specified circumstances, or subject to specified conditions, be called upon to pay, deliver, or render in the future, but for the payment, delivery, or rendering of which there is no present obligation. Liabilities such as those mentioned above

under (1), (2), and (3) do not arise from the reception of wealth in any form from others; neither do they constitute claims upon the wealth in the possession or control of the enterprise or government in whose accounts they are recorded. They are therefore liabilities in name only, and are thus properly spoken of as nominal liabilities. In accounting, the nominal liabilities mentioned under (3) are generally called contingent liabilities.

Proprietary Interests.—In the accounts of enterprises conducted for gain, the claims of creditors and of the beneficiaries of trusts are recorded, as has already been stated, by credit entries in the accounts here called balance sheet accounts, or accounts summed up in the balance sheet. The property rights of the owners or proprietors of the same enterprises, or their equity in their assets, are also recorded in the same group of accounts by credit entries. From the fact that these rights are thus recorded on the same side of the ledger accounts and balance sheets as are liabilities, they have been by many accountants included in the balance sheet under the generic designation "liabilities." The objections to this procedure are well stated by Mr. Charles E. Sprague, in "The Philosophy of Accounts," pages 46 and 47, as follows:

> The rights of others, or the liabilities, differ materially from the rights of the proprietor, in the following respects:
>
> (1) The rights of the proprietor involve dominion over the assets and power to use them as he pleases even to alienating them; while the creditor can not interfere with him or them except in extraordinary circumstances.
>
> (2) The right of the creditor is limited to a definite sum which does not shrink when the assets shrink, while that of the proprietor is of an elastic value.
>
> (3) Losses, expenses, and shrinkage fall upon the proprietor alone, and profits, revenue, and increase of value benefit him alone, not his creditors.
>
> For these reasons the proprietary interest cannot be treated like the liabilities, and the two branches of the right-hand side of the balance sheet require distinctive treatment.

In order to distinguish fully between (1) the claims of creditors and trust beneficiaries, upon the assets or properties of an enterprise for gain, and (2) the property rights of the owners or proprietors of such an enterprise,

in these assets or properties, the Bureau of the Census in its schemes of "accounts" arranges the claims mentioned in one group of balance sheet accounts under the common term "liabilities," as has already been described, and arranges the property rights of the owners or proprietors in a second group of accounts to which it gives the specific designation proprietary interests. In the case of corporate enterprises for gain, the rights last mentioned may also be referred to as corporate capital.

Classification of Proprietary Interests.—The proprietary interests of corporations are vested in their stockholders, and are represented by certificates of ownership called "certificates of stock," which may be of various kinds and receive different designations, such as "first preferred stock," "second preferred stock," "common stock," etc. The proprietary interests of a private individual in the property of unincorporated enterprises owned or controlled by him are not evidenced by any formal certificates or other proof of ownership, and may be considered as constituting an undivided whole as contrasted with the collective ownership of the stockholders of corporate enterprises.

The proprietary interests of stockholders in the property of corporations and those of individual owners in the property of unincorporated enterprises for gain controlled by them, when considered from a legal standpoint, consist of a single and undivided whole. For accounting purposes these interests, in the case of corporations, are separated into two principal classes which are referred to in the accounts as "stocks" and "surplus." Under the term stocks are included that portion of the total proprietary interests of the stockholders represented by the par value of their stocks; while under the designation surplus are included all other proprietary interests.

When any portion of the proprietary interests of a corporation organized for gain which are represented by

its surplus is set aside or appropriated for any specified purpose or object, it is said to be reserved, while all other portions of the surplus are said to be unreserved. Reserved surplus is frequently spoken of as surplus reserves. These reserves may or may not be associated with "asset reserves," or reservations of assets. When they are thus associated the reservations of assets and of surplus for the same objects or purposes give rise to special funds which are frequently called "reserve funds." The most common purposes for which the proprietary interests of corporations for gain are reserved are for meeting future losses from bad debts, depreciation, casualties, and kindred causes. The reserves themselves always receive designations indicating the purpose or object of the reservation, and separate accounts are always kept with each class of reserves established.

Reserves that must be kept intact during the life of the corporation are called permanent reserves, and all others are called temporary reserves. Reserves necessitated by contracts, such as those relating to sinking funds provided for by mortgages, are called contractual reserves, while reserves not thus necessitated are referred to as non-contractual reserves.

The proprietary interests of individual owners of unincorporated enterprises for gain cannot be separated into two portions corresponding to the capital stock and surplus of corporations. These interests can, however, be separated into two portions designated respectively as reserved and unreserved proprietary interests. Under the designation reserved proprietary interests of individual owners is included that portion of their property rights in the enterprise controlled by them which has been set aside or reserved for specified purposes. All other property rights of the owners mentioned constitute their unreserved proprietary interests. These latter interests correspond to the interests represented by the "capital stock"

and "unreserved surplus" of corporate enterprises for gain, while the reserved proprietary interests receive specific designations and call for the same procedure in accounting as do the surplus reserves of corporations organized for gain.

Attention has already been called to the fact that the property rights of the owners of enterprises for gain, or their proprietary interests, are recorded by credit entries in accounts here called proprietary interest accounts. The proprietary interest accounts of the average enterprise for gain not only contain entries representing the actual proprietary interests, or entries representing the capital of the proprietors employed in the enterprise, but they also contain amounts recorded by credit entries and balances which represent no actual property rights of the owners, but accounting offsets to nominal assets. These entries are referred to by the Bureau of the Census as nominal proprietary interests. The most common nominal propprietary interests recorded in the accounts of enterprises for gain are those entries which represent corporate stock issued by the enterprise and held in its treasury or by one of its funds with investments, and revenue charges awaiting cancellation. Under the latter term are included losses charged as expenses but not written off in the asset accounts in which are contained the records of the properties affected by the losses.

Interests of Beneficiaries.—In the accounting records of colleges, churches, and other charitable institutions the claims of creditors upon the assets of those institutions and the interests of their beneficiaries in such assets are recorded by credit entries in balance-sheet accounts. The property rights represented by these two classes of entries are as distinct and separate in character, one from the other, as are the liabilities and proprietary interests similarly recorded by credit entries in the accounts of enterprises for gain. To be of any great administrative value,

the accounts of these charitable institutions should distinguish between the claims of creditors and the other property rights mentioned. Fully to accomplish this result, the property rights of beneficiaries in the assets of these institutions are here called interests of beneficiaries, and the claims of creditors against the institutions are given the designation "liabilities," although in a strict legal sense of the word all the interests of beneficiaries may be called liabilities.

Some of the interests of beneficiaries of colleges, churches, and other charitable institutions result from unconditioned gifts, that is, gifts for the general purpose of the institution receiving; while others arise from conditioned gifts, that is, gifts of money or other wealth to be expended, used, or held for specified purposes or objects, or to be expended, used, or held subject to specified conditions. The interests of beneficiaries represented by the unexpected gifts of the first class are here called unreserved interests of beneficiaries, while those of the second class are called reserved interests of beneficiaries. Some charitable institutions call the reserved interests last mentioned "funds," or "special funds." The reserved interests of beneficiaries here referred to may also receive many specific designations, according to the special purposes for which the property received by gift has been reserved or the conditions which constitute the reservation.

Revenue Accumulations of Governments.—The amounts recorded by entries on the right-hand side of governmental balance-sheet accounts and summaries represent in part claims of creditors and of the beneficiaries of private trusts upon the governmental assets, and in part the interests of the citizens and general public in these assets. To distinguish the claims first mentioned from the interests last referred to, as must be done to secure any assistance from accounts in the proper administration of governmental finances, the interests last referred to should be given some

specific designation. If the state or municipality is considered as a proprietor and the accounts installed for the guidance of its administration are proprietorship accounts, the interests may be given the same designation as in the case of enterprises for gain, that is, "proprietary interests." If, however, the accounts of the state or municipality are fiduciary in character, the interests here referred to may properly be called interests of governmental beneficiaries. A designation that is applicable for both classes of accounts, and which is, therefore, better in most respects than either of those given above, is one which recognizes the origin and character of these interests. That designation is revenue accumulations. The term calls attention to the fact that the interest of the citizens or general public in the assets of a government represent the revenues of the past that have not been expended in meeting the current costs of governmental maintenance.

Fully to distinguish between the financial interests or equities of the citizens of a nation, state, or municipality in its assets, properties, and public improvements and the claims of others upon such assets, etc., the claims referred to should be recorded in one group of accounts receiving the name "liabilities," and the interests or equities of the citizens in a second group called "revenue accumulations," or otherwise. In the first group should be recorded the claims of creditors and those of the beneficiaries of private trusts and of public trusts for non-governmental uses, and in the second the interests of the citizens, classified according to character.

Classification of Revenue Accumulations.—In governmental accounting, some credit entries are made in the balance-sheet accounts for "revenue accumulations" which are employed for the purpose of securing accounting control over specified classes of transactions, or for other purposes, and represent no accumulations of unexpended revenues, but accounting offsets to actual or nominal assets.

All such credit entries are here called nominal revenue accumulations, to distinguish them from amounts of actual accumulations of revenue for governmental purposes. The revenue accumulations most frequently met with in governmental accounts are of two distinct classes: (1) Those which are to be held, used, or expended for specified governmental purposes or subject to specified conditions; and (2) those which are to be held, used, or expended in the discretion of the Government. The former class may be called reserve, special, or unconvertible revenue accumulations, or governmental reserves; while the second class may be called unreserved, general, or convertible revenue accumulations.

Governmental Reserves.—The governments of states and municipalities have no capital stock as have private corporations, and hence no surplus. The amounts of revenue accumulations held for future expenditures, or employed for the acquisition or construction of the more permanent public improvements, or for the purpose of investment, must from one point of view be considered as an undivided whole; and yet these revenue accumulations may have been set aside or designated for specified governmental purposes by the terms of donations or of grants from other civil divisions, or by conditions stated in general or special appropriation acts. While in origin these reservations differ somewhat from those of private enterprises, they are, from the standpoint of the accountant, analogous, and therefore can with propriety be given similar designations to those applied to reservations of corporate surplus. Accordingly they are here spoken of as "governmental reserves," or simply as "reserves."

Governmental reserves, like the surplus reserves of private enterprises, receive designations and are classified primarily with reference to the object or purpose for which they are reserved, or the conditions under which certain funds are received and are held. The only reser-

vations that are usually recorded in governmental transactions are, however, those shown in the accounts of governmental funds—general, special, and trust. These reserves, like the surplus reserves of private corporations for gain, are of two distinct classes, those which are here called permanent and temporary.

Permanent governmental reserves are those recorded in governmental accounts with revenue accumulations which represent the principal of special or trust funds that has been received with the understanding or obligation that such principal must be kept intact forever, and only its income expended for general or special governmental purposes.

Temporary governmental reserves are those recorded in governmental accounts with revenue accumulations which represent that portion of general, special, and trust funds that is at once available for meeting current expenses and has, by the terms of general and special appropriation acts, been reserved for specified expenditures. The reserves of the general funds are those represented by the credit balances that record the provisions and limitations of the general appropriation acts, while the reserves of the special and trust funds are those representing the limitations and conditions imposed by the terms of special appropriation acts, such as those accompanying bond issues and those representing the limitations and conditions surrounding the expenditures of so-called governmental public trust funds for governmental uses.

Most American governments, in accounts with their properties and public improvements, have but one account for the interests or equities of the cities in such properties and public improvements, and that is an account recording a summary of the amount of such equities. A few cities, introducing improved accounts in the last few years, have separated those equities or interests into two groups corresponding to the reserved and unreserved revenue accumu-

lations of the governmental funds. The interests in these properties, etc., corresponding to the reserved revenue accumulation of the governmental funds, are those which represent the gifts or other voluntary contributions which the Government has received and has expended in the acquisition or construction of its properties and public improvements as called for by the terms of the givers. These governmental reserves may all be called permanent, and will in accounts be shown in detail under specified heads disclosing the purposes to which the money or other wealth received has been devoted.

Expenses.—In governmental accounting, expenses are (1) the accrued costs, paid or payable, of services, rents, and materials, exclusive of those for permanent properties and improvements, utilized by nations, states, and municipalities for the maintenance and operation of their governments and for the conduct of their business undertakings for which they have constitutional or statutory authority; and (2) the losses by depreciation of permanent properties and otherwise. Expenses are the costs and losses for which no permanent or subsequently convertible value is received or receivable.

The expenses of governments may be classified in many ways. Classified with reference to the objects for which they are incurred they are readily arranged under the heads of "salaries and wages," "rents," "materials," and "depreciation," all of which classes may be subdivided into a large number of minor groups, to which may be given specific names, as in the case of the expenses of private concerns. Governmental expenses are further separable into two principal groups, here called general expenses and commercial expenses.

General Expenses.—The general expenses of the governments of nations, states, and municipalities are those incurred by them in connection with the exercise of their general govermental functions. These expenses are, by

the Bureau of the Census, subdivided into eight principal groups, corresponding to the following division of governmental activities: I. General government; II. Protection of life and property; III. Health conservation and sanitation; IV. Highways; V. Charities and corrections; VI. Education; VII. Recreation; VIII. Miscellaneous. The expenses included in each of these subdivisions are further classified by the offices, departments, or otherwise, into a number of groups, fully illustrated by the tables of this report.

Commercial Expenses.—The commercial expenses of the governments of nations, states, and municipalities are those incurred by them in connection with commercial functions. They are divided into four groups, corresponding to the subdivisions of commercial transactions, as follows:

(1) Expenses of municipal service enterprises are the total costs of the operation and maintenance of municipal service enterprises, or the expenses of those departments or offices of a city which are organized mainly for the purpose of furnishing the city with some public utility or with some service which most cities obtain from or through private enterprises.

(2) Expenses of public service enterprises are the total costs of operation and maintenance of the public service enterprises of a nation, state, or municipality, or the expenses of those departments or offices of a city which are organized for the purpose of providing the public, or the public and the city, with some public utility or service.

(3) Investment expenses are the total costs of the administration of sinking, investment, and public trust funds of nations, states, or municipalities.

(4) Special service expenses are the expenses incurred by nations, states, and municipalities in connection with special services performed or provided by any of their departments or offices other than the public service and municipal service enterprises.

Interest.—In governmental accounting, the term interest is used as the designation of the accrued costs, paid or payable, incurred by nations, states, and municipalities for the use of credit capital utilized by them. These costs are separable into a number of groups, according as they are classified with reference to the purpose for which the credit capital was utilized, or according to the character of the governmental obligations evidencing the indebtedness on which the interest is payable.

Outlays.—In governmental accounting, outlays are the accrued costs, paid or payable, of lands and other properties more or less permanent in character, and thus available for more than a single use, which are owned or used by nations, states, and municipalities in the exercise of their governmental functions or in connection with the business undertakings conducted by them. The outlays of governments are separable into the same groups as are their general expenses and the expenses of public utility enterprises.

Investments.—For a statement of the nature of investments see a former page under "invested assets."

Storehouse Supplies.—Under the designation "storehouse supplies" are included all costs, paid or payable, of supplies purchased by governments in bulk for cities, which are to be distributed or assigned upon requisition to the departments, or are to be applied to current uses or to the construction of public improvements. They are acquired under conditions which preclude the assignment of their costs at the time of purchase to the purposes for which they are finally applied. In practice, these costs are referred to under a number of more specific designations.

Revenue Charges and Revenue Deductions.—In private corporation accounting many business men and accountants employ the terms "revenue charges" and "revenue deductions" in referring to all costs and losses that must

be met from or charged to revenue, in order to ascertain the income or net profits accruing from the management of the enterprise as compensation in the form of dividends or otherwise for the corporate capital or capital of the proprietor employed therein. The costs and losses of private business thus chargeable to or to be deducted from revenue are those here called expenses and interest. In accounting for governmental service or municipal service enterprises, where such accounting is made on the basis of securing comparability with corresponding private enterprises, the terms "revenue charges" and "revenue deductions" have the same significance as stated above. In accounting for the governments of nations, states, and municipalities, it is to be noted that all the costs and losses referred to above as expenses, interest, outlays, investments, and storehouse supplies, are in one sense charges against revenue, since they are met from accumulations of past revenues or present revenues, or from future revenues by anticipation. The costs and losses included under expenses, interest, and outlays are the current costs of government, and may with propriety be included under the designation current revenue charges or current revenue deductions.

Revenue Expenditures.—The term revenue expenditures is by many public and private accountants employed with the significance given above to revenue charges and revenue deductions, and the word "expenditures" is also employed as a general descriptive term, including all that is signified by the words expenses, interest, outlays, investments, storehouse supplies, disbursements, and payments. It is sometimes employed in the present report with the general significance last referred to.

Revenues in Private Corporate Business.—In private corporate business the word revenues is the designation most frequently employed at the present time in referring to amounts of money, or money's worth, which corpora-

tions and enterprises, other than those engaged in trade, receive or become lawfully entitled to receive as the result of business transactions, the sale of property, or the rendering of services, and as returns upon property or interests in property. Many accountants use the word income with the significance here assigned to the word revenues, but the word revenues is at the present time employed by the larger number of accountants, many of whom employ the word income in referring to the excess of revenues over expenses.

Governmental Revenues.—The revenues of nations, states, and municipalities are the amounts of money, or money's worth, provided or obtained by them for meeting those costs of government called expenses, interest, and outlays, and are derived from the following sources: (1) From the exercise of the governmental powers of taxation and police control; (2) from the receipt of donations, gifts, grants, and subventions for governmental uses; (3) from the performance of services for compensation, and the furnishing of material objects for valuable considerations; and (4) from the operation or management of the productive enterprises, investments, and properties of the Government.

The revenues or revenue of a fiscal year are the amounts of revenues or revenue which have been provided or obtained, or made applicable, for that year. To distinguish between the revenues, or revenue, received and those receivable to the credit of a given fiscal year, the former may be called realized and the latter authorized but unrealized. Classified with reference to their character, the revenues or revenue of nations, states, and municipalities are, like governmental expenses, readily separable into two classes, called respectively by the Bureau of the Census general and commercial revenues or revenue.

The general revenues, or the general revenue, of a nation, state, or municipality are the amounts of wealth

unconditioned upon the performance of any specific service to the individual contributor, provided or obtained as the compulsory or voluntary contributions of private individuals, corporations, or other civil divisions, for defraying the general costs of government. The greater portion of these revenues are derived from taxes; the remainder are obtained from fines and forfeits, gifts, donations, grants, and subventions.

The commercial revenues, or revenue, of a nation, state, or municipality are the compulsory or voluntary contributions of private individuals and corporations levied and collected as compensation for services rendered, material objects furnished, or assumed special benefits conferred upon those from whom such revenues or revenue are obtained. Included in commercial revenues are those properly called, or here designated, special assessments, privileges, fees, charges, and sales, and those which are secured by the management or operation of productive governmental enterprises, investments, and properties.

Taxes.—Taxes are compulsory contributions of wealth levied, or levied and collected, in the general interest of the community, from individuals and corporations without reference to special benefits which the individual contributors may derive from the public purposes for which the revenue is required or to which it is applied.

Property taxes, which constitute the most important single source of American municipal revenues, are direct taxes upon property or upon persons, natural or corporate, in proportion to their property. Property taxes are, by the Bureau of the Census, divided into two subclasses designated, respectively, general and special property taxes.

General property taxes are those direct taxes which are assessed and collected by methods practically identical for all kinds of property, while special property taxes are those which are assessed and collected upon specified

property by methods not applied to the assessment and collection of taxes upon property in general. All general and most special property taxes are apportioned according to the value of the property subject thereto, and so far as they are thus apportioned are properly spoken of as ad valorem taxes.

General property taxes levied at the same rates upon all property within the territory of the taxing power are here called general levies of the general property tax. Similar taxes levied upon the property of specified portions of the territory of the taxing power, or at varying rates in different parts of that territory, are here called local levies of the general property tax. Both general and local levies may be for a variety of objects and may be authorized by any civil division, and all may receive specific designations according to the object or purpose of the tax, and the civil divisions whose revenue they constitute.

Business taxes are taxes collected from persons, natural or corporate, by reason of their business, where such collection is not associated with the granting of a license or permit to carry on such business.

Licenses or permit taxes are taxes collected from persons, natural or corporate, by reason of their business, where such collection is associated with the granting of a license or permit to carry on such business, or where without such license or permit the individual or corporation has no legal right to engage in the business.

Poll taxes (also called capitation taxes) are taxes assessed upon persons without regard to their property. They may be levied uniformly upon all males of specified ages, or graded according to occupation, or otherwise. Some of them are levied in specified amounts against all persons subject thereto, and others are quasi property taxes based upon an arbitrary valuation of polls. Poll taxes graded according to occupation may also be called occupation taxes.

Fines and forfeits are amounts accruing to the benefit of nations, states, and municipalities as part of the punishment of individuals and corporations for failure to observe civil or criminal laws, or to perform the terms of specified agreements.

Gifts and donations are designations for amounts of voluntary contributions received by governments from private individuals, while grants and subventions are the terms generally applied in speaking of amounts received by one government from another. Amounts received as above, from private individuals or from governments, may be accepted either with or without specified conditions as to their use or investment.

Special assessments, like taxes, are compulsory contributions levied under the taxing or police power of nations, states, and municipalities to defray the costs of specified public improvements or public services undertaken primarily in the interest of the public. They differ from taxes in that they are apportioned according to the assumed benefits to the individuals or corporations for whom the services are performed, or according to the assumed increase in the value of the property affected by the improvement. They are, by reason of the difference here stated, classified as commercial rather than as general revenues.

Privileges.—The designation privileges is applied (1) to the special contract rights, in and upon highways, granted by special or general laws and ordinances to specified individuals and corporations; and (2) to the amounts that are paid or payable to the general treasury as compensation for such rights. The rights which are enjoyed are of the same legal nature as those which in private business are called "easements." These privileges are, by the Bureau of the Census, divided into two classes called, respectively, major and minor. The major privileges are those which are exclusively enjoyed by public service corporations, and which such corporations must possess in

order to carry on their operations; while the minor privileges are those granted to public service and other corporations and to private individuals for the privilege of utilizing for business purposes specified portions of the street or sidewalk, or the spaces above or below the same. It should, however, be noted that revenues derived from minor privileges granted in connection with the management of municipal markets, and the regulation of market sales of merchandise by its producers in the streets, are in all cases to be considered as parts of the revenues of markets.

Fees and Charges.—Fees and charges, as distinguished from taxes, are compulsory contributions of wealth which are exacted from persons, natural or corporate, to defray a part or all of the costs involved in some specified service rendered by the Government.

Fees are amounts of money paid or payable for services which are never performed except by governments; while charges are amounts of money paid or payable for services performed by governments which are similar in character to those performed by one individual for another. The greater portion of all "fees" are receipts for services where the costs of the same are so well known that they are established by statute and are generally collected in advance; while "charges" can be definitely determined only upon completion of the work, and advance payments are only to guarantee the payment of costs when determined.

Governmental revenues obtained or secured from the operation of productive enterprises, investments, and properties include rents, interest, receipts from sales of manufactured products, etc., the same as in private business management. The classification of such revenues and the terminology thereof are identical with those employed in connection with the revenues from similar sources of private productive enterprises, investments, and properties.

Revenue.—The revenue of a nation, state, or municipality is the aggregate amount of money or other form of wealth provided or obtained by it for the objects and from the sources previously mentioned under "governmental revenues."

The word "revenue" is also used as a part of many compound terms, such as "revenue expenditures," "revenue loans," "revenue tariff," "revenue law," "revenue producing law," "revenue account," etc., in most of which it retains its significance as here defined. For other legal and accounting terms in which the word "revenue" is employed with a different meaning, substitutes should be adopted in order to avoid complexity and to obtain simplicity of terminology and clearness of statement.

A revenue law is a law made either for the direct or the avowed purpose of creating or procuring revenue for the support and use of the Government, while a revenue producing law is one from the operation of which revenue accrues to the benefit of the Government.

A revenue account is an account showing the source, amount, and disposition of moneys received from revenue. All revenue accounts are treasury accounts, the latter term being a common or generic designation of all accounts showing the amounts of money received into the treasury from specified sources, and the disposition of the same. All moneys so received are spoken of as public moneys, or public funds.

Payments.—In accounting, payments are primarily amounts of money, or its equivalent, delivered or disbursed in financial transactions either in the interest of or for the satisfaction of claims against the payer.

Receipts.—In accounting, receipts are primarily amounts of money, or its equivalent, taken in in financial transactions, either for the benefit of the recipient or for the benefit of another.

It has already been noted that the statistics of the

financial transactions of cities compiled by the Bureau of the Census are primarily statistics of governmental payments and receipts. These payments and receipts may be classified in many ways. The most important classification is one based upon the fact that some amounts of money paid or received lessen or add to the cash in the treasury, while others do not lessen or add to such cash. A classification of the payments and receipts of governments upon this basis gives rise to two classes here called real or actual, and nominal or transfer, payments and receipts.

Real or Actual Payments.—The real or actual payments of a nation, state, or municipality are the amounts of money, or money's worth, which its officials deliver to the public, including the governments of other civil divisions, and which lessen the total cash in its possession or control.

Real or Actual Receipts.—The real or actual receipts of a nation, state, or municipality are the amounts of money, or money's worth, which its officials take from the public, including the governments of other civil divisions, and which add to the total cash in its possession or control.

Real or actual payments and receipts, being in all cases payments to and receipts from the public, may with propriety be called payments to and receipts from the public. The terms last mentioned are by the Bureau of the Census employed interchangeably with the terms real or actual payments and receipts.

The real or actual payments and receipts of a government, or its payments to and receipts from the public, may in turn be classified in many ways, the most significant classification being that which separates the payments and receipts for meeting the costs of government from all other actual governmental payments and receipts. Thus separated, the payments and receipts of nations, states, and municipalities are readily arranged in two groups, here called payments and receipts for meeting governmental

costs, and payments and receipts other than those for meeting governmental costs.

Payments and receipts for meeting governmental costs are the net amounts of money, or other wealth expressed in terms of money, which nations, states, and municipalities pay or expend for meeting costs of government, or its expenses, interest, and outlays, and which they receive from all sources. The Bureau of the Census has in its previous reports given the name "corporate" to such payments and receipts, for lack of a more comprehensive and brief designation. It is hoped that a more descriptive designation may be suggested.

Payments of nations, states, and municipalities for meeting costs of government are readily separable according to the objects of their payments into four classes: (1) Payments for expenses, (2) payments for interest, (3) payments for outlays, and (4) payments for the liquidation of indebtedness. These classes include the net amounts paid by governments for the objects and purposes mentioned, after amounts received to correct erroneous payments for these purposes and other counterbalancing payments have been deducted. The payments for the liquidation of indebtedness which are to be included among payments for costs of government are the net payments for this purpose, or the excess of payments for this purpose over the amounts received for debt obligations assumed or issued during a given period. The different classes of payments for meeting costs of government are frequently spoken of in this report as the net payments for expenses, interest, and outlays, and for the liquidation of indebtedness. These payments are readily separable into the same classes and given designations corresponding to those for expenses, interest, outlays, etc., of which mention has previously been made.

The receipts of nations, states, and municipalities for meeting costs of government are from two sources—

revenue and public creditors. The receipts from revenue here mentioned are the net amounts obtained from revenue, as above defined, after deducting all amounts received in error and returned or to be returned in correction thereof. They are readily classified according to the specific source from which derived, and when thus classified will follow the classification of revenues already presented. Receipts from creditors, included as receipts for meeting governmental costs, are the net amounts obtained from loans and other credit transactions. They are the excess of the receipts which result from the transactions mentioned over payments for the liquidation of loans and other debt liabilities during any fiscal period.

In private business, amounts received from loans and other credit transactions are recorded by entries only in the cash account and in the liability accounts. The amounts received are generally considered as belonging to "capital," and not to "revenue." The corresponding amounts received by governments are by writers on public finance—such as Henry C. Adams, professor of political economy and finance in the University of Michigan; Richard T. Ely, professor of political economy in the University of Wisconsin; and many others—recognized as being resources for meeting the costs of government, and thus to be included in the same general class as "governmental revenue." To distinguish receipts from loans and other credit transactions from those obtained from what has here been defined as "revenue," the latter are called, by the writers mentioned, receipts from "permanent" and "final" revenues; while those obtained from loans are designated receipts from "anticipatory" or "temporary" revenues. The statutes of many American states recognize the principles underlying the classification and terminology employed by Professors Adams and Ely by calling short term loans "anticipatory loans," "anticipatory

tax loans," "anticipatory revenue loans," "anticipatory warrants," etc.

Receipts from revenues should, as a rule, be arranged in the same classes and under the same designations as the revenues from which they are obtained; and receipts from loans and other credit transactions should be classified according to the nature of the instruments evidencing indebtedness, or of the credit transactions giving rise thereto.

The actual payments of cities other than those for meeting governmental costs are amounts of money, or other wealth expressed in terms of money, paid by them to the public, which do not lessen the amount of resources available for meeting the costs of the Government. The actual receipts of cities other than those for meeting governmental costs are those which do not add to the resources available for meeting the costs of government. These payments and receipts are of three distinct classes, called by the Bureau of the Census counterbalancing payments and receipts, payments for and receipts from investments, and payments and receipts as agent or trustee.

Counterbalancing payments and receipts of a nation, state, or municipality are amounts paid to and received from the same individual, or paid and received for the same object. They are of four distinct classes: (1) Payments and receipts in error, balanced by receipts and payments for the correction of error; (2) payments and receipts for accrued interest on bonds and on securities purchased by invested funds, balanced by later receipts and payments of the government or of the funds originally paying or receiving; (3) receipts from debt obligations issued and assumed, balanced by amounts paid for the redemption or liquidation of indebtedness during the same fiscal period; and (4) payments for outlays, balanced by receipts from sales of real property, and receipts from insurance companies on account of losses by fire. Amounts

paid and received in correction of error are given the specific designation of refunds.

Investment payments of a nation, state, or municipality are the payments for the purchase of securities and other investments by its invested funds, such as those designated sinking, public trust, and investment funds; and its investment receipts are the amounts received by its government from the sale of securities or other properties belonging to the same funds.

Trust and agency payments and receipts of a nation, state, or municipality are amounts of money which its government disburses and receives for the government of another civil division, or disburses and receives as a quasi trustee for private individuals, or for public trusts for non-governmental uses.

Nominal Payments and Receipts.—The nominal payments and receipts of a government are amounts of money, or money's worth, which one of its divisions, branches, offices, or accounts pays and another receives, but which do not lessen or add to the total cash in the possession or control of the government.

Nominal payments and receipts are by the comptroller of New York City called inter se transactions; by the Bureau of the Census they are most frequently called transfer payments and receipts, or simply transfers.

Nominal payments and receipts of governments, when classified according to the character of the transactions involved in a transfer, are designated as "general transfer payments and receipts," "service transfer payments and receipts," "interest transfer payments and receipts," "investment transfer payments and receipts," and "accounting transfer payments and receipts"; and when classified with reference to the divisions, departments, or offices between which the transfer is made, as "major" and "minor" transfer payments and receipts.

General transfer payments and receipts are amounts

of money, materials, or credits set over by accounts or delivered from one division, fund, enterprise, office, class of assets or liabilities, object of expenditure, or source of revenue to another.

Service transfer payments and receipts are public utilities furnished by a governmental enterprise; or the service performed by one governmental division, enterprise, or office; or through one governmental fund, object of expenditure, or source of revenue, for another governmental division, fund, enterprise, office, object of expenditure, or source of revenue.

Interest transfer payments and receipts are amounts paid to a governmental fund or received by it from a division of a government as interest on governmental securities or debt obligations held by the fund.

Investment transfer payments and receipts are amounts of securities or other investments paid or delivered by one fund and received by another fund, or amounts of governmental obligations delivered by a division of a government to a fund, or received by it for a fund, and the receipt or delivery of cash in return therefor.

Accounting transfer payments and receipts are amounts of money, or money's worth, which are set over by credit and debit entries from one class of accounts to another, as from an asset to a revenue account, or from an expense to a liability account.

Major transfer payments and receipts are amounts of money or its equivalent, transferred by one independent division or fund of a government to another.

Minor transfer payments and receipts are amounts of money, or other wealth expressed in terms of money, paid by one office to another, or set over in the accounts of a division of a government from one object of expenditure, or source of revenue, to another.

Ordinary and Extraordinary Payments and Receipts.— A classification and terminology that have been in use

longer than any of those above mentioned are those that separate governmental payments and receipts into two groups, called respectively ordinary and extraordinary. This classification and terminology originated in governmental finance and grew out of a policy once observed by all nations, states, and municipalities in meeting the costs of their governments. This policy has now been abandoned by the greater number of nations, states, and municipalities, and in governmental accounting the names ordinary and extraordinary represent survivals from past methods without administrative or other significance at the present time, although they have been adopted and are generally used in private corporation accounting with their earlier significance in governmental administration. To understand the earlier governmental use of these words in the classification and terminology of payments and receipts, it is necessary to consider their present administrative use in the field of modern corporation accounting.

One of the objects of private accounting for proprietorship is to ascertain for each fiscal year the outcome or results of business operations expressed in terms of profit and loss. Another object is to equalize dividends from year to year. To assist in the accomplishment of these two results, all regularly occurring expenses and all other small expenses are each year charged against or deducted from revenue before dividends are declared. The amounts thus charged are called ordinary expenses, or expenses that ordinarily occur. When, however, exceptionally large costs or losses occur, such costs or losses are called extraordinary, and are distributed as revenue charges or deductions over a series of years, so that they may not disturb the regularity of dividends. Two methods are employed for accomplishing these results. One is to provide for extraordinary costs and losses in advance by setting aside reserves from surplus for the exigencies that involve these expenditures; and the other is to charge them temporarily

to a suspense account, and later, when it may be found most advantageous from an administrative point of view, to charge them to revenue.

Modern governments, unlike private corporations, can seldom accumulate large and effective reserve funds for meeting extraordinary governmental costs. But few American cities hold funds of this character, and they are principally for insurance purposes, and the only funds of the kind that are now held by national governments are those included in "war chests" or hoards of the precious metals to meet the possible exigencies of war. At the present time, therefore, the average nation, state, or municipality employs but one method for meeting extraordinary or abnormal costs and losses, and that is by loans which enable it to do what a private corporation accomplishes through a suspense account or reserve fund. These loans permit the government to distribute the burden of the extraordinary costs and losses upon the taxpayers over a series of years, in the same way that the amounts charged or held in suspense are deducted with regularity from revenues by the private corporation. The extraordinary governmental costs to be thus distributed are those which, like the expenses of war, or costs of a city hall, occur but seldom, and may well be distributed through a series of years; while the ordinary governmental costs are those which regularly occur, and which should therefore, like the regularly recurring expenses and interest charges of a private corporation, be met every year from revenue. The application of the principles embodied in this administrative policy makes the costs of a village schoolhouse extraordinary, since they occur only once in twenty or fifty years; while similar costs for schoolhouses in cities needing ten new schoolhouses each year would be ordinary, because recurring in the same way that the ordinary expenses of a private business recur.

Few American governments employ the words ordinary

and extraordinary in the manner described, which corresponds to the use of the word in private business and accounts, and is identical with the earlier governmental usage which gives rise to the admirable method here referred to as adopted in private accounting. If any large number of governments so employed these words, the classification would admirably serve statistical purposes and would be of large administrative value for governments. Unfortunately the average American city, as the average European government, has departed widely from the earlier administrative policy followed in financing costs and losses, and of the cities using the terms "ordinary" and "extraordinary" no two assign them the same significance. As a result, no comparative statistical compilation can be based upon local classifications of payments and receipts as ordinary and extraordinary. By reason of this fact, the Bureau of the Census makes no attempt to employ the words in its terminology of payments and receipts, or to predicate any of its classifications upon the usage with which these words are employed by any given city.

Accounting Summaries.

Importance.—In both governmental and private business, accounts are made of administrative assistance mainly through the instrumentality of summaries, or condensed statements of the facts recorded in or derived from accounts. Without such summaries it is impossible for an administrative officer or other person to gather from his accounts any comprehensive knowledge of his business. The number as well as the character of the summaries that are employed by any enterprise or government determines the extent to which accounts are made of assistance in its administration. The summaries employed in accounting are readily separable into two groups, here spoken of as general or principal, and departmental, functional, or subordinate, according to

whether they relate to a business in its entirety or to the various subdivisions thereof. Consideration is first given to the summaries employed in the accounts of private business.

Summaries in Accounts for Proprietorship.—Private undertakings conducted for gain, as has been pointed out, make use of proprietorship accounts. To be of administrative assistance, they must disclose the property rights of the owners, and exhibit the relation of those rights to the assets or possessions of the undertaking, and to the claims of creditors and trust beneficiaries thereupon. They must also disclose the effect or result of current financial transactions upon the property rights of the owners. The accomplishment of these ends in accounting for proprietorship requires two principal summaries—one a statement of business condition and the other of business results. The statement of business condition is most commonly called, in the case of a solvent concern, a balance sheet, and in the case of an insolvent one, a statement of affairs. The summary of results is called a profit and loss account or statement, or a revenue and expense summary, or is given some other descriptive designation, depending somewhat upon the nature of the business.

These summaries assume many forms, depending to a large extent upon the magnitude and character of the data to be summarized, and upon the facts or details it is desired to present. With all details eliminated, the form assumed by the balance sheet of an enterprise for gain is as follows:

Assets.	Liabilities. Proprietary interests.

In this statement, the total liabilities and proprietary interests must equal the assets, and the amount of proprietary interests is disclosed by deducting the liabilities from the assets. In like manner, the results of the transactions of a non-trading concern, such as a public service

enterprise, may be summed up or stated in a simple form, as follows:

Revenues		\$......
Expenses	\$......	
Interest	......	
		......
Profit		......

The profit, in this case, is always the excess of revenues over expenses and interest. In case the expenses and interest are greater than the revenues, the result is a loss. But whatever the result is, the amount of profit or loss shown in the statement should agree with the difference between the proprietary interests at the beginning and those at the close of the period for which the summary of results is prepared, plus or minus the changes made therein during that period.

The proper administration by a city of a public or municipal service enterprise, such as a water-supply system or an electric light and power station, can be secured only by adopting substantially the same business methods as are used by private owners of similar concerns. The employment of these methods in their entirety involves also a similar manner of keeping accounts, in order that the effect or results of the operation of the enterprise upon the city, either in increasing its net expenses or in providing revenues from the enterprise for other municipal purposes, may be shown. The accounts of such municipal enterprises, therefore, must be proprietorship accounts, and the summary statements called for must be similar to those described in the preceding paragraph.

Summaries such as those described above are all that are employed by enterprises for gain whose only use of accounts is to disclose the amount of assets, liabilities, and proprietary interests, and to measure the profit and loss for given fiscal periods. Such enterprises, though many in number, are with the passage of years coming to represent a constantly decreasing proportion of the

total; while an ever-increasing number whether publicly or privately owned, are striving to arrange their accounts and provide summaries thereof in such a way as to enable the accountants and administrative officers to demonstrate when and how gains are realized or losses suffered, and also to measure the amount of such gains and losses. To accomplish these results, the accounts of this class of enterprises are divided and subdivided so as to record separately the revenues obtained from every source, the costs of every functional activity, and the value of the property employed in connection with each activity. Further, these various divisions and subdivisions of accounts are summarized in accounts especially arranged therefor, which are given many specific designations, but are referred to in a general way as "controlling accounts," and which are in fact accounting summaries subordinate to the principal or general summaries described in the preceding paragraph. The number and character of these controlling accounts will depend upon the nature of the business in which they are employed and the simplicity or complexity, or the varying number of the accounts utilized for administrative purposes.

Summaries in Private Fiduciary Accounting.—Neither the balance sheet nor the profit and loss account above described is of importance in the accounts of trustee or agents, except where the agency or trusteeship involves primarily the care of productive properties or enterprises, and the trustee is required to show how much the owners have gained or lost by his management of the property or enterprise. In the case of productive properties, the business is conducted by the agent or trustee solely with reference to the property rights of the owners, and hence his accounts are proprietorship accounts. But when the agent or trustee is intrusted with the expenditure of money or the disposal of or acquisition of property in specified ways, the accounting summaries must reflect the nature

of the agency or trust, and the extent to which the duties and obligations under the same have been fulfilled. The summary of such accounts approximates in form the profit and loss statement rather than the balance sheet of an enterprise for gain. The essential entries in such a summary are as follows:

Amount received in trust, or trust to be discharged..................	$......
Amount paid in trust, or trust discharged..........................	......
Amount on hand, or trust not yet discharged.......................	......

When an individual holds a fiduciary position, such as that of executor of an estate from which an income or revenue is derived, he generally accounts separately for the principal and income, and each summary embodies the essential fact called for by the condensed statement or scheme of reporting given above.

Summaries of fiduciary accounts exhibit the extent to which special fiduciary obligations have been met or discharged. They do not provide the data for measuring the efficiency of an agent or trustee. To accomplish such a result, the summaries described must be accompanied with supplementary exhibits, generally called by accountants "schedules," which must present all the data necessary for the purpose mentioned. Such exhibits, which may be given any form that will best present the facts needed for demonstrating the efficiency of an agent or trustee, bear the same relation to the principal or general summary above described that the controlling accounts of various orders do to the general summaries of the enterprise conducted.

Summaries of Governmental Business.—As the accounts of a commission merchant differ from those of a manufacturing or transportation company, and as the accounts of all three differ from those kept by the executor of an estate, so governmental accounts—though embodying the same fundamental principles as the accounts of the classes mentioned—differ from these accounts. In like

manner, governmental summaries must differ from those employed by all other classes of business, whether involving the idea of proprietorship or that of responsibility. In each case, the summaries, to be significant, must present data that are of administrative importance, and in forms that throw light upon administrative problems. These problems of governmental business are greater in number and more complex in character than those of any private business, and for that reason governmental financial data require for their proper presentation in summary form either the use of a larger number of simple statements or summaries, or the employment of very complex statements. Consideration is first given to some of the simple summaries of governmental business.

1. **Summaries of Governmental Expenditures.**—No accounts of nations, states, and municipalities having responsible representative governments are of greater administrative importance than the accounts which summarize expenditures and show their relations to appropriations. Such accounting summaries measure the fidelity with which the executive officers have complied with the instructions given them by the legislative branches of the Government. All cities in the United States with proper accounting systems prepare monthly and annual summaries of this character.

These summaries are prepared not only by the responsible heads of the several administrative departments, but also by the general fiscal officers of the cities—the comptroller or auditor, and the treasurer. The departmental and general summaries of expenditures should be arranged so as to present the following facts: (1) The balance brought forward from the appropriations of preceding years formally reappropriated for the current year; (2) the annual appropriation or appropriations included in the budget; (3) the appropriations made after the preparation of the budget or in addition thereto; (4) the total

appropriations; (5) the matured bills, paid or payable, for costs of government; (6) the unexpended or free balance; and (7) the amount of this balance at the close of the year which under the terms of the appropriation acts is available for the succeeding fiscal period.

Very many American cities prepare monthly and annual summaries that include the greater portion of the data mentioned in the foregoing descriptive statement; such summaries, if statements of facts, are exhibits which show how far the executive officers of governments have complied with the instructions given them by the legislative branch of the Government. But they do not provide any data or means of measuring the economy or efficiency of governmental administration any more than the simplest form of a profit and loss account presents data showing when and how profits are made and losses sustained. Governmental accounting summaries, to be of as much administrative assistance as the best accounts for proprietorship, must provide the means for measuring the economy and efficiency of every branch of service and the work of every administrative office or officer. This can be done by methods that are substantially the same as those utilized by private enterprises for gain for disclosing when and how gains are made and losses sustained. The expenditures must be classified, according to character, into those for expenses, interest, and outlays. They must further be divided and arranged in accounts which will show the costs of government for each and every branch of service or class of outlays. The accounts in which these expenditures are reported should be arranged, however, in a number of general and subgeneral groups according to the functional activity which they represent, in the same way as the asset and expense accounts of private gainful enterprises, and the accounts of each group should be summarized in controlling accounts of such orders as may be found

most convenient, according to the size of the city and the volume of its business activities.

To make these accounts of the largest practical administrative assistance, and true measures of governmental efficiency and economy, governmental budgets should be prepared along lines that will permit the accounts with expenditures as above described to be fully articulated with the accounts with appropriations. Laws should be provided and strictly enforced to compel all bills for expenses to be presented and audited before the close of the year, and all accounts with outlays to be so kept as to show approximately the value of the work performed upon all public properties and improvements. With these and kindred regulations in force, requiring governmental business to be transacted by business-like methods, governmental accounts and summaries of expenditures and appropriations will not only provide measures of the fidelity with which executive officers have complied with the instructions of the legislative branch, but will become the basis of measuring the economy and efficiency of every branch of governmental service. The end here described, however, can not be fully attained until the accounts of governmental expenditures are so arranged on common or uniform lines as to provide the means of ready comparisons of the expenses of each city with those of its neighbors of the same size and operating under similar conditions.

A number of American cities keep accounts with appropriations and expenditures in detail, as described above. In addition, they prepare monthly and yearly summaries of their appropriations and expenditures, which are at once exhibits of fiduciary accountability and measures of executive efficiency and economy. Such detailed summaries provide the information under the eight heads stated above not only for the city as a whole, but also for each object of expenditure or appropriation. They further

show the amount transferred from one appropriation to another.

Of the cities providing exhibits of expenditures and appropriations arranged on standard functional lines, mention may here be made of Cambridge, Mass. The monthly statements of that city, arranged on the basis here described, have the great merit of being understood by the average city official and taxpayer, and of presenting facts relating to the subject in a form that shows their legal and administrative relations and provides a basis for testing the economy and efficiency of administration.

2. **Summaries of Governmental Receipts.**—The expenditures of responsible, representative governments must always conform to conditions stated in appropriation acts, and in well-governed states and municipalities appropriations are always based upon estimates of receipts. To disclose the wisdom of the legislative branch of the Government and its advisers in making appropriations, and to make past estimates of governmental receipts an aid in the preparation of future estimates, nations, states, and municipalities should prepare monthly and yearly summaries of estimated and realized receipts, classified in detail according to source of receipt. To make these summaries of the greatest value, they should be prepared on standard lines which call for the arrangement of receipts in groups, according to the character of the revenue and the other sources from which or through which money is obtained. This standard grouping of receipts must be based upon a classification devised by the leading economists and students of governmental finance throughout the world. There is already a general agreement among these economists and students, which is in substance reflected in the classification of governmental revenue receipts made use of by the Bureau of the Census in this publication, and presented in previous pages. In form, the city of Cambridge, Mass., presents a most comprehensive and intelli-

gible statement of the estimated and realized receipts corresponding to the exhibits of appropriations and expenditures previously referred to.

Hitherto the controlling accounts with receipts kept by the great majority of American governments have been records of the amounts of cash passing into the treasury, substantially as has been described in preceding paragraphs. Such accounts are measures of the good judgment of the governmental officials in making advance estimates of governmental receipts. They provide, however, no measure or test of the efficiency of executive officers in collecting the amounts that should be received by the treasury. To provide the means of testing that efficiency, accounts must be kept and detailed summaries prepared such as are provided by the controlling accounts of a private business, showing for each source of revenue the amounts that ought to be received and the amounts that actually are received. To this end, accounts should be kept with "revenue" as well as with "receipts" by methods approximating those employed by the most progressive private enterprises for gain. Monthly and yearly comparisons in detail of the revenue debits and revenue receipts, with explanations of the reason for all variations, will, for states and communities with good revenue laws, provide the data for demonstrating the efficiency or inefficiency of fiscal officers, and for other states and communities will demonstrate the need of better systems of revenue laws.

3. **Summaries of Payments and Receipts.**—The accounts of a governmental treasurer were originally kept to demonstrate the fact that none of the money received by him had been converted to personal uses, but that all of it had either been expended for public purposes as required by law, or that all or a part of it was still in his custody. The accounts of auditors and comptrollers were in the beginning kept primarily as a check upon the accounts of the treasurer. Summaries of the payments and receipts

of the treasurer were prepared at an early date by that officer and also by the comptroller and auditor, and such summaries in their earliest form are still necessary in the administration of governmental finances. In their simplest form these summaries show the amounts of money on hand at the beginning and at the close of each fiscal period. The progress made in accounting methods, however, requires that modern governmental summaries of payments and receipts shall be something more than statements, such as those just described, and in particular that they should state separately the amount of cash at the beginning and close of the year in the principal administrative funds, such as the general funds and special funds for different purposes requiring the reservation of cash and expenditures for specified purposes only.

To be of the greatest administrative assistance, as well as of the greatest value to the general public, summaries should classify payments and receipts as described on preceding pages, at least to the extent shown in the analysis of Tables 3 and 4 of the present report. The receipts thus summarized should include all amounts taken in by the treasurer or treasurers for any purpose and from any source, and should be classified so as to show the amounts received, respectively, from the public and from departments of the Government. The amounts received from the public should be further separated so as to show those received for meeting costs of government and those received for other purposes; and the amounts received for meeting costs of government should be arranged in groups which will show the amounts obtained from specified principal sources of revenue and the amounts received from credit transactions which increase the net indebtedness of the nation, state, or municipality.

On the other side of this summary the payments including all amounts paid out or disbursed by the fiscal officers for any purpose and to any person, should be classified

as described above for receipts, into those paid to the public and those paid to the departments of the Government; and in turn, those paid to the public should be separated into those for meeting costs of government and those for other purposes or objects. Payments for meeting costs of government should include all amounts paid out by the preparation and delivery, or the preparation only, of audited bills or vouchers, or warrants by the comptroller or auditor, for the principal classes of expenses, interest, and outlays, and all amounts disbursed by the treasurer under circumstances or conditions which lessen the aggregate of public indebtedness.

Such a summary will disclose at a glance the relation of correct administration to public indebtedness. The nation, state, or municipality which has an excess of revenue over all current costs of government, including expenses, interest, and outlays, is, for the time being at least, decreasing its indebtedness. Such a decrease may be the result of conservative and economical administration which uses public credit only for meeting exceptional, non-recurring, or "extraordinary" costs of government; or it may result from the fact that the Government has reached the limit of its debt-incurring power, and as a result of necessity, must pursue a saner administration that in some respects is along the same lines as an administration of the character just mentioned. The nation, state, or municipality, whose expenses and interest exceed or even approximate the amount of its revenue, has entered upon a course which if not changed will, even with the greatest increase in local wealth, sooner or later bring it to the limit of its borrowing power. Governmental officials and writers on public finance are not agreed as to what should be the true policy of nations, states, and municipalities with reference to public indebtedness; and at the present time definite facts relating to the amount of public indebtedness and the relation of current governmental transac-

tions to that indebtedness are needed even more than discussion of the true policy of governmental administration. Under such circumstances, nothing can be done by governmental fiscal officers and accountants to assist in opening the way for the final determination of the true policy of governments with reference to public debt that would prove to be of as much value as the presentation of summaries such as those above described, which show clearly and exactly all the facts about revenues and costs of government as outlined, and disclose the present drift of the nation, state, or municipality with reference to public indebtedness.

To be of the greatest value, a summary of payments and receipts such as that described must be based upon accurate accounts, and be associated with promptness and dispatch in the conduct of business. The payments to be included in the summary of expenses, interest, and outlays are those represented by the audited bills or warrants drawn by the auditor or comptroller upon the treasurer. If such bills or warrants are always issued promptly after presentation of just claims, they represent the current costs of government as perfectly as the expense account of the best-managed private corporations represent current costs of operation. If, however, claims are not presented when they accrue, or are not audited and paid by warrant promptly upon presentation, neither the accounts nor the summaries are records or statements of the current costs of government, and such accounts and summaries will continue to have a considerable margin of error until the Government corrects its method of transacting business. This is far more vital than changes in methods of accounting, which are to be considered factors for good only so far as they assist in stimulating and enforcing correct methods of administering business.

4. **Summary of Budgetary Expenditures.**—The governments of most American cities prepare more or less

elaborate budgets or statements of expenditures to be met from current revenue. Some of these cities include all their costs of government in such a budget, and thus meet from revenues not only their current operating expenses but all amounts required for outlays and those to be transferred to sinking funds or employed for other specified purposes. Summaries of receipts and payments arranged as stated in the preceding section will show the relation of revenue receipts to costs of government, and the formal payments for the liquidation of indebtedness. These summaries, however, will not exhibit the relation between the revenue receipts, or revenue, and the payments other than those for current expenses and interest made specially payable from current revenue by the terms of the appropriation or revenue acts. A complete summary of revenue, or revenue receipts, and budgetary expenditures or the expenses and other charges made specifically chargeable to current revenue, is a statement of considerable administrative significance and assistance. Such statements are at the present time very frequently presented under the term "summary of revenue and expense," a term which is not strictly applicable to them, since the designation "expense" is not a proper one to use in referring to amounts transferred to sinking funds, disbursed for meeting the costs of outlays, or for similar purposes, even though paid from revenue. A better, because more descriptive, designation for referring to all these amounts made payable from revenue by the specific terms of the appropriations is "budgetary expenditures."

5. **Summaries of Revenues and Expenses.**—A governmental summary of revenues and expenses is a statement which shows on the one side, either in a single entry or in a number of specific entries, the amount of accruing revenues for a given fiscal year, and on the other side the accruing expenses for the same period. By accruing revenues is meant the amount of revenue that is entered in

the accounts to the credit of that year. In practice, it is the amount charged in revenue accounts as that which ought to be collected from various sources for governmental uses. By accruing expenses are meant those which have been approved and audited by the proper accounting officer. In all the best-managed cities the accruing expenses here mentioned are identical with the warrant payments for expenses by the comptroller or auditor. They correspond to the amounts that would be charged to expenses in any well-managed corporation. With poor governmental management the warrant payments are more or less defective measures or statements of the costs of government, but no more trustworthy or accurate exhibit of such costs can be obtained by any system of accounting until or unless the business administration of the city is improved.

In theory, at least, accrued governmental revenues correspond to the accrued revenues of a private business, which are always employed to measure the current profit or loss of an enterprise. The accrued revenues of a private business always tend to increase the profit or decrease the current losses. For administrative purposes these accruals must be placed over against the accruals of expenses. In the business of governments considered as the agents of the nation, state, or municipality, accrued revenues never become factors in any important administrative problem other than that which concerns their collection, to which attention has previously been called. Appropriations are made on the basis of estimates of revenue receipts, and not revenue charged or to be charged on the books; and in this and in other ways revenue receipts and warrant expenses, and other costs of government met by warrants, become the essential factors in the important administrative problems of government. For this reason, such summaries of receipts and payments as those already described become of supreme administra-

tive value and importance, and summaries of revenues and expenses are only statements of academic or theoretical significance notwithstanding their vital importance in private accounting.

6. **Miscellaneous Summaries.**—In addition to the foregoing summaries which, with the exception of the type last mentioned, are prepared in one form or another by most American cities, there are many other kinds of summary statements employed in connection with the financial administration of municipalities. The great majority of such statements are arranged for the purpose of summarizing data that are of special administrative significance to the city preparing them, by reason of the operation of state laws or specific local regulations. In the present connection, however, it will be sufficient to mention only two of these summaries.

In cities where general property taxes are never collected in the year when levied, or in the fiscal year on whose accounts they are carried, some account must be kept which, like a summary statement, will disclose the relation between the tax levies and the revenue loans issued in anticipation of their collection. Such summaries may never be included in formal printed reports, but they constitute important memoranda for the guidance of fiscal officers issuing and of bankers providing governmental loans.

A summary of the same general nature is prepared by cities showing that their sinking fund assets and their method of accumulating such assets suffice to provide the funds for liquidating all loans when due.

7. **Summaries of Current Funds and Accounts.**—All the summaries hitherto described are simple in form and easily understood by all. With few exceptions each, directly or indirectly, shows the relation of two classes of financial data. The most vital facts in each case may be summed up in a balance-sheet form, although some of them

may be presented better in a form that approximates that of a private profit and loss account. Many cities content themselves with keeping accounts and printing separate summaries such as those already described; while others endeavor to include part or all of the data included in summaries of the types described under 1, 2, and 3, together with certain other data, in a single statement which may be called a statement of condition, corresponding in governmental business to that section of the balance sheet of a private business which includes current assets, liabilities, and proprietary interests. Such summaries are given many different names, and may best be described by calling them summaries of current funds and accounts. Such a summary will show at the beginning of a fiscal year on the debit side (1) the cash on hand, as indicated in the outline of "summaries of receipts and payments," and (2) the estimated receipts for meeting governmental costs, as described under "summaries of governmental receipts"; and on the credit side (3) the debt liabilities to be met during the current fiscal period or directly from the assets credited to that period and (4) the expenditures authorized for the fiscal period by general and special appropriation acts. The balance between the two sides, if on the credit side, represents current resources available for future appropriation or for meeting indebtedness, or for making investments; while a debit balance marks a prospective deficiency which must be met by the creation of a permanent or floating debt.

The amounts to be included in a summary such as is here outlined for any date subsequent to the opening of the fiscal year will be for (1) and (3), respectively, the cash in the treasury and the outstanding liabilities at the date of the summary. The corresponding amounts to be included under (2) will be those of the original estimated receipts less the cash obtained from sources that have not created a liability to be included under (3); and the

amounts to be similarly included under (4) will be those of the original appropriations less the expenditures previously made in consonance with the terms of the appropriation acts.

Such a summary is not a statement of a business employing proprietorship accounts, but of one employing fiduciary accounts. It shows on the one side the cash intrusted to the Government for governmental uses, and the amounts which the Government is expected to realize from specified sources for those uses, or the failure to realize, which it is expected to explain. It exhibits on the other side the debts and expenditures to be met or authorized to be met from the amounts first mentioned, and thus the specific uses to which the amounts first mentioned are applied. Such a summary, therefore, brings into one statement an exhibit of the current administrative problems of the executive officers, including the fiscal and other officials.

On previous pages mention has been made of the fact that in recent years some American cities have installed proprietorship accounts to take the place of the earlier fiduciary accounts. The great majority of accountants who are engaged in installing these accounts insist that in such a scheme it is improper to include in a summary of condition such as the one here referred to any such exhibit as that mentioned under (2). These accountants contend that from the standpoint of proprietorship it is inadmissible to include in the summary any revenues that have not accrued and become charges against definite persons. If this contention is sound in theory and law, as it appears to be, these accounts should show in the summary of current funds and accounts only the revenues which have actually accrued. The summary as thus prepared would show a greatly fluctuating proprietary interest through the year, as if the city credit or basis of credit were fluctuating with the formal levying of taxes and the collection of

revenue. As stated on previous pages, the test of all accounts is in the administrative assistance which they render the officials responsible for good government, and time alone can decide which of the two systems of accounts is more desirable—those first described, whose summaries show each month what the executive officers are authorized to do and the resources on which the authorizations are based, or those of the latter type, whose summaries disclose not what is to be done and how it is to be done, but what has been formally charged as amounts owed by or owed to the city.

8. **Summary of Investments, Properties, and Accumulations.**—The summaries heretofore described are primarily exhibits of official responsibility and public obligations to be met and the resources provided or expended for meeting them during a limited fiscal period, principally in the future; but governmental accounts should not only look to the future but be records of the past. They should summarize the outcome of past transactions so far as their results provide properties and public improvements for the use of the present and future, or lay burdens of debt and taxation upon the present and future. The accounts in which these records are kept may be made an essential part of the circle of accounts from which are obtained the data for the summary last described, or they may be recorded in an independent circle of accounts, as may seem most convenient.

A governmental summary which will provide the information outlined above must show on the one side (1) all funds with investments which are held for governmental uses, such as sinking funds, public trust funds for governmental uses, and general investment funds, and (2) all governmental properties—productive and non-productive—and public improvements; and on the other side (3) the fixed or funded debts incurred in the past; (4) the amounts of the funds and properties acquired as the result of free

contribution from the public, either with or without specified conditions, and those set aside for specified purposes; and (5) the amounts acquired from compulsory revenues. All amounts included under (4) and (5) constitute revenue accumulations for the more or less permanent uses of the Government, and correspond to the proprietary interests of an enterprise conducted for profit and employing proprietorship accounts. Of these amounts, those included under (4) correspond to those amounts which, in the case of a private enterprise, are reserved or constitute its surplus reserves.

9. **General Governmental Summaries.**—A few governmental accountants and governmental officers are giving thought to the preparation of general summaries of governmental financial condition. They would include in such summaries all data presented in the summaries outlined under 7 and 8. No summary along this line has yet been prepared that has been satisfactory to more than a limited number of those interested, since it has either been so complex as to be readily understood by only a few, or it has omitted some facts of administrative importance, and thus has been an imperfect and often misleading exhibit. Until or unless some more simple method of summarizing all the financial data of administrative importance is devised than has yet been presented to the public, the average city official and the average private citizen will find far more of interest and of administrative value in the summaries previously described than in the one here referred to.

Names of Governmental Summaries.—The average commercial accountant knows of but two business summaries—the one which he calls "balance sheet" and the one called "revenue and expense" or "profit and loss" account. When he is called in as an expert to arrange governmental accounts, he applies these names with but little discrimination to governmental statements, and hence we find Amer-

ican cities referring to all the summaries mentioned, respectively, under 1, 2, 3, 7, 8, and 9 as balance sheets or trial balances, although no one city applies the designation mentioned to more than one of these statements. None of these governmental summaries above referred to, and none of the others which have been described, is a true balance sheet in the sense in which that term is employed in private business for gain. They are all governmental statements, and should be given designations which are as little as possible associated with summaries of private enterprises for gain, in the same way that those summaries are distinct in name and in form from those for private fiduciary accounting.

SECTION C.

SOME RECENT CHANGES IN GOVERNMENT ACCOUNTING.*

BY H. PARKER WILLIS, Ph. D.

Government methods of transacting business are not of the inadequate type sometimes described. They are in the main well-suited to their purposes, and, though far more expensive than those which would be applied by a commercial establishment, they are usually reliable. Their chief defect has come from the entire independence of different departments of the Government, the jealousy of cabinet officers toward one another, the inertia of bureaucratic officials remaining in office year after year and unwilling to modify old methods in spite of changes in business conditions. Because of these factors in the situation, and because the development of government departments has been rapid and irregular within recent years, new functions being taken over by a process of accretion without corresponding organic changes in administrative structure, a growing number of readjustments and improvements have been called for by the actual conditions of the public service. Needed changes included not only alterations in methods of accounting, but also innovations in modes of purchasing supplies, conducting the manufacturing operations of the Government, and checking the disbursement of money. Attention has often been called to the necessity of such changes prior to the administration of President Roosevelt. The postal scandals, the unsatisfactory and discreditable conditions in the Government

* Repronted from Journal of Accounting, April, 1909.

Printing Office, and the poor quality of organization in the post-office department, as well as disparity in methods of purchasing supplies, once more emphasized the need already recognized early in Mr. Roosevelt's term of office. Coupled with these were several striking and unfortunate shortages on the part of disbursing officers of the United States. In order to ascertain the direction properly to be taken by the needed innovations, the methods of their introduction, and the additional cost thereby entailed, President Roosevelt appointed, about the middle of 1905, a committee of executive officers, which was officially known as the "Committee on Department Methods." Through the direct efforts of this organization, which associated with itself a large number of sub-committees comprising in all some seventy different subordinate officers of the Government, a general overhauling of public business methods was undertaken. The changes proposed by the committee, and actually introduced upon its suggestions, included matters of internal organization, departmental relations, modes of purchasing and contracting, and many others. A complete account of the alterations in business methods thus brought about would require an elaborate treatment. It is proposed here merely to suggest some of the typical changes in modes of accounting which have been produced largely as a result of the investigations of the committee. It is not true in all cases that the new methods now employed were directly adopted at the instance of this committee, but it may fairly be said that in the majority of cases they were a result of the general movement of which the labors of the committee constituted the most striking feature. All that will be attempted in the present review is to select a representative example of each of the important classes of changes that have been introduced largely under the influence or inspiration of the committee, and to explain it as illustrative

of the new point of view which has been adopted by the administration.

Treasury Accounting.

Although not the earliest in point of time, the most important suggestion made by the committee relates to the accounting system of the Treasury Department. The Treasury has always pursued an efficient system of accounting, but its results have been such as required much explanation as well as intimate acquaintanceship with the methods pursued in the other departments. Briefly summarized, the plan of accounting followed by the Treasury prior to 1907 was as follows:

*Four classes of warrants were recognized by the department, and all moneys covered into or paid out of the Treasury were (and are) required to be covered or paid upon the appropriate one. The four classes of warrants were appropriation warrants (issued for the purpose of crediting appropriation accounts with funds); pay warrants (authorizing the Treasurer of the United States to pay out funds either later to be accounted for by disbursing officers or else for the purpose of settling amounts due by the United States to creditors); covering warrants (authorizing the Treasurer to take up in his general accounts deposited revenues or funds held by disbursing officers and re-deposited in the Treasury); and transfer and counter warrants (issued for the purpose of charging one appropriation and crediting another in order to bring about an adjustment). With this legal basis, the division of bookkeeping and warrants in the Treasury was in the habit of keeping registers of revenue warrants,

*A complete official account of treasury methods of accounting is found in the document entitled "Information Relating to the Accounting System of the United States Treasury Department," compiled by Robert S. Person, and published by the Government Printing Office in May, 1905. The report on which the recent changes have been based was issued for private circulation by the Committee on Department Methods as a "Report to the President by the Committee on Department Methods. Treasury Bookkeeping," January 19, 1907.

registers of paid warrants, and registers of re-pay warrants. Appropriation warrants were never registered, but were themselves bound after being posted. Appropriation ledgers were kept, and also personal ledgers relating to collecting officers, disbursing officers and special accounts. The appropriation ledgers were posted from registers of warrants, while personal ledgers were posted either from warrants of the kinds specified or from auditors' certificates.

From this review it is seen that the result of the books was merely a classification of gross revenue collections and of gross warrant withdrawals. No trial balance would be possible, and blunders could be detected only through careful work by auditors and the clerks in the Treasury Department. The defect of the system was the inability to prove the correctness of the accounting at any given time, and also the difficulty of exhibiting in convenient form the precise status of each appropriation as well as of the balances in the accounts of officers of the United States.

As a central necessity in the reorganization of treasury bookkeeping, the Committee on Department Methods recommended the introduction of a comprehensive system of double entry. The problem was to provide a debit and credit side for all accounts, including revenues and expenditures. The change implied the introduction of five new books not previously kept by the department, viz., the general ledger, the journal, the ledger of revenues, the ledger of expenditures, and the register of auditors' certificates—the first two books to be written up only once a month. A form of journal voucher embracing the entire transactions was recommended, these vouchers to be spread upon the journal after being certified and approved. The journal was to be posted to the general ledger providing general accounts with the Treasurer of the United States, collecting and disbursing officers, with individuals and firms with whom business was done, with revenues

by five general classes (customs, postal, internal revenue, sales of public lands, and miscellaneous), with appropriations, with expenditures, with warrants, deposits and withdrawals, and with other proper accounts. It was argued that these innovations would enable the status of each account in the aggregate to be determined in advance, would insure correct details, would compel a balance of all accounts, and would anticipate detailed balances of the several accounts, and compel their correctness, while requiring consistent and comprehensive statements of items entered in auditors' certificates. At the end of the year it would show the status of all the accounts, the opening balances of all accounts, the revenues, the expenditures, the miscellaneous transactions incident thereto, and the final balances in all accounts. The plan was approved by a select committee of public accountants appointed by The American Association of Public Accountants, and was ordered put into operation.

In a final order issued July 14, 1908, specified definitions of general accounts were ordered to be observed subsequent to that date, and all certificates of settlement of accounts thereafter were to be made and declared on a similar basis. Under the head of general accounts, six general classes were recognized. The first included five general accounts—customs revenue, postal revenue, internal revenue, public lands, and miscellaneous revenue. The second and third general classes of expenditures included four general accounts—expenditures excluding reductions of public debt, the return of trust funds, etc., the public debt (payments of interest, however, being charged not to this account, but to that of expenditures), special funds, disbursements from which were to be charged to expenditures, and trust funds, to be credited with receipts of trust funds, and charged with disbursements from trust funds. The fourth general class included personal accounts—those with the Treasurer of the United States, those with fiscal

officers, and those with the District of Columbia. Class five included so-called "record accounts," these being two in number—appropriations, and available funds. Class six consisted of clearing accounts, and included treasury deposits, charged with items certified for credit to fiscal officers, accountable warrants, settlement warrants, warrants account, transfer of funds, advances to fiscal officers, and credits of fiscal officers. To these general accounts there was added a special class of accounts entitled balances, being a continuation of the former balance account, and including with each year the balances of the preceding year's accounts of audited revenues and expenditures. To this account would be charged the additional credit balances and credited the additional debit balances in fiscal accounts brought into the books of the current year. It was further ordered that the division of bookkeeping and warrants should not keep separate accounts with collecting and disbursing officers by appropriations, but should keep separate accounts with officers, corresponding to the accounts required to be rendered by them to the several auditors of the Treasury Department. In calling for the bookkeeper's certificate of balances due from collecting and disbursing officers and other depositors, it was directed that the auditor should indicate the period covered by the account about to be settled, and request a certificate from the division of bookkeeping and warrants of charges and credits covering that period only.

Disbursing Officers' Vouchers and Balances.

An important change in the methods of treasury accounting formerly in use has further been made in connection with disbursing officers' checks and vouchers, and the verification of disbursing officers' balances.* Under

* The recommendations to the President on this topic made by the Committee on Department Methods are found in the "Report to the President of the Committee on Department Methods"; Assembling Disbursing Officers'

the system in vogue prior to 1907 the expenses of government were paid by either of two methods: (1) A treasury warrant was issued, upon an auditor's certificate, in favor of the public creditor. This method of payment was commonly known as a direct settlement. (2) Disbursing officers who had received advances from the Treasury paid public creditors (usually by check) and took a receipt, which became the voucher on the basis of which the disbursing officer claimed credit in rendering his accounts to the auditor. Of the two the system of paying through disbursing officers covered far the larger part of the expenses of the Government.

Investigation showed that disbursing officers were in the habit of securing receipts from public creditors in advance of payment, the creditors frequently signing receipts in blank, leaving the dates and amount to be filled in as occasion required. Duplicate vouchers, and in some cases triplicate or even quintuplicate vouchers, were secured by the disbursing officers and offered a corresponding opportunity for fraud. Whenever a disbursing officer stated his account to the appropriate auditor and acknowledged a certain balance due to the United States nothing was done by the auditor to verify that statement. In many cases disbursing officers have been short in their accounts for years, acknowledging a given amount to be due the United States, when as a matter of fact they did not have the acknowledged amount in hand. Various efforts to correct the situation have been unsuccessful. In looking over the conditions, the Committee on Department Methods recommended that the receipt habitually taken in advance should be abolished, and that in place of it should be provided a form of certificate to be signed by the claimant. The claimant's certificate was to be followed by the certificate of the proper administrative officer approving

Checks and Vouchers, and Verification of Disbursing Officers' Balances. The order putting these recommendations into effect was issued as Department Circular No. 52, July 29, 1907.

the claim, while the check to be delivered in paying the account in question should state upon its face the object for which drawn, and also the number of the voucher in payment of which it was drawn. It was recommended further that assistant treasurers and national-bank depositaries should render monthly statements just as formerly to each disbursing officer having funds on deposit with them, but should at the same time send to the Treasury Department for distribution to the proper auditors duplicates of the statements sent to the disbursing officer, accompanied by such officer's paid check listed in the statements. The auditor would thus have the means of checking up each statement, and ascertaining accurately whether or not a given disbursing officer had in his hands or on deposit to his official credit and not covered by outstanding checks, the amount of his stated balance. In order to test the proposed scheme, experiments were undertaken, and from these it was concluded that the new system, besides its technical advantages, would be comparatively cheap, involving an additional outlay of probably not more than six per cent of the existing work of the accounting officers. Working on the basis of these suggestions, the Secretary of the Treasury issued an order introducing substantially the system recommended by the committee which is now in practical operation.

In putting the new system into effect there has naturally been some necessity for innovation, retraining of clerks, and adjustment of old methods to new. This process has not been without its friction, and some of the older officers of the department have been inclined to question the wisdom of adopting the double entry system with its greater amount of detail and labor. Thus the auditor of the Navy Department in reporting for the year 1908 states flatly as the reason why his office fell seriously behind in its work during the year, the considerable amount of "extra work" necessitated by the new system, and the labor in-

volved in training the clerks to follow the system. Time has not yet been allowed for a thorough and complete test of the efficiency of the new method, nor is it absolutely certain whether the greater convenience and certainty attained under the new plan will make up fully for the greater labor and costliness involved in the additional bookkeeping operations which have been necessitated. That the plan is a substantial improvement from the accountant's standpoint there can be no question, while the publication of more and clearer details with reference to government fiscal operations will be made practicable under it.

Introduction of Cost Accounting.

An important aspect of the new movement for better business methods in the public service is seen in the recent effort to put the various manufacturing activities which the Government conducts upon somewhat the same plane that is occupied by similar undertakings in private hands. By this is not meant that there has been any effort to introduce a lower standard of payment or to reduce wages paid by the Government to commercial standards. On the contrary, the work of the Committee on Department Methods, as well as that of the systematizers and reorganizers of the Government generally, has recognized a high standard of payment with due recognition of the older workers as a necessary feature of the public service, and as a desirable part of the Government's duty in upholding a suitable example for private employers to work toward so far as competitive conditions permit. What has been sought is an understanding of the actual use made of public moneys, and more careful analysis of the ways in which they have been expended, with a corresponding analysis of the results accruing from such outlay. The public enterprise which most nearly approaches a commercial type of organization at the present time is the Government Print-

ing Office, an establishment toward whose systematization various officials have for years been struggling without result.

Government Printing Costs.*

The great problem of the Government Printing Office for many years past has been that of ascertaining costs sufficiently accurately to permit of correct charges to the several departments on a basis that would allow the office to come out clear and without a deficit at the end of the year. That the officials have found it impossible to attain this end may be seen from a tabulation prepared during certain inquiries at the Government Printing Office directed by President Roosevelt, which exhibits the resources or appropriations, disbursements, unexpended balances, sales, and disbursements in excess of sales over a period of years. From this it is seen that the disbursements in excess of sales during the years 1900-1907 inclusive, amounted to $7,962,307. During the same period expenditures for plant properly chargeable to the years in question approximated $3,100,000. A difference of about $5,000,000, therefore, represents the discrepancy between actual receipts for the commercial services of the institution and outlays for carrying it on.† In fact, since 1900, Congress has been incurring an expenditure of about $600,000 a year over and above the income earned by the office. The conclusion that a system of cost accounting was needed which would place the charges for printing upon the different departments to which they properly belonged, was therefore irresistible.

An investigation into conditions in the printing office by the Committee on Department Methods was originally

* For information with reference to the system of accounting and cost keeping in the Government Printing Office I am indebted to Hon. John S. Leech, late Public Printer, and to his associates in the work of the office, especially to Mr. Vipond, the head of the Accounting Division, and Mr. Kendal, the Assistant Superintendent of Work.

† Hon. W. S. Rossiter made a complete investigation of the office by direction of the President, and the above data, are taken from his report.

Comparative statement of resources, disbursements, and sales beginning with the appropriation for printing and binding of 1900.

Appropriation.	Resources.	Disbursements.	Unexpended balance.	Sales.*	Disbursements in excess of sales.
1900	$4,623,998.78	$4,591,057.74	$ 32,941.04	$3,994,941.26	$ 596,116.48
1901	5,088,692.35	4,982,465.74	106,226.61	4,033,193.71	949,272.03
1902	6,055,020.52	5,766,370.11	288,650.41	4,928,870.98	837,499.13
1903	6,304,414.18	5,943,046.38	361,367.80	4,647,351.09	1,295,695.29
1904	7,325,814.45	7,036,059.22	289,755.32	5,010,853.79	2,025,205.43
1905	6,653,985.38	6,212,092.92	441,892.46	5,283,792.49	928,300.43
1906	6,482,084.91	5,813,089.13	668,995.78	5,409,124.55	403,964.58
1907	5,668,779.98	†5,814,822.10	‡146,042.12	4,888,567.53	926,254.57
Total	$48,202,790.64	$46,159,003.34	$2,043,787.30	$38,196,695.40	$7,962,307.94

* Represents the total of the amounts charged to Congress and the several departments for work done.
† Includes outstanding orders.
‡ Deficit.

directed by President Roosevelt for the purpose of securing information as to certain contracts and methods about which doubt was felt. This investigation broadened into an inquiry into the cost of public printing and the possible lines of economy. It was about the time of this secondary investigation that Public Printer Palmer resigned and was followed by Charles A. Stillings. The new public printer was disposed to give due weight to the suggestions which had been made by the Committee on Department Methods, and among others he found the following, which had been laid before President Roosevelt in a report made January 2, 1906:

> There should be established in the Government Printing Office a proper system of cost keeping. There is not, and never has been a system of cost keeping in that establishment. The charges made against the various departments for work ordered to be paid for out of the department allotments for printing do not accurately reflect the cost of the work. . . . An accurate system of cost keeping . . . would . . . also permit the cost of work in the printing office to be better compared with that of private establishments. It would enable standards of cost for the solid, tabular, and other kinds of work to be established. It would also disclose the actual saving from the adoption of new devices and machinery and whether the results obtained equal those obtained by others using the same devices. In the institution of such a cost-keeping system in the printing office the service of an outside expert could be profitably used. . . . The establishment of a cost keeping system in a large printing establishment is a complicated matter, and the use of a specialist in instituting an accurate system is almost indispensable.

Acting upon this suggestion, the public printer introduced, so soon as he was able to obtain the requisite appropriations from Congress, a cost-keeping plan known as the "audit system." This was established by a New York firm at a total cost for the system itself and the supplies needed under it of about $130,000. Inasmuch as the cost of public printing did not decrease, but was added to by the unusually large cost of the new system of accounting, the innovation made by Mr. Stillings did not meet with approval. A special investigator, directed by President Roosevelt to look into the situation in the office, terminated the contract with the firm which had established the "audit system," and largely curtailed the operations involved in the cost-keeping plan. Reporting upon the system, which will

not be reviewed here because of its practical elimination, this investigator said:

> It . . . is principally to be criticised upon the score that in an attempt to secure all classes of detail, the amount of labor entailed upon each employe for the purpose of recording necessary facts, and the amount of labor required for subsequent tabulation were so great as to make the system almost prohibitive.

Subsequent to assuming office, June, 1908, Hon. John S. Leech, who succeeded Mr. Stillings in the control of the Government Printing Office, undertook a complete reorganization of the system of cost accounting which had been introduced, recognizing it as most desirable that such a system be applied to the work of the office, though he did not approve of the plans that had been attempted by his predecessor under the advice of the framers of the audit system. Mr. Leech's methods of cost accounting were of exceptional interest, because they had been worked out by himself as a result of many years' experience, first in the Government Printing Office at Washington, and later as public printer in the Philippines, where he was in charge of the printing establishment of the Philippine Commission.

The main ideas accepted by Mr. Leech as the foundation of his cost system are two in number:

(1) The adoption of appropriate systems of measuring cost in each productive operation, without any effort to pursue an absolutely uniform system of measurement for all operations.

(2) The abandonment of the idea of apportioning individual costs to particular pieces of work, and the substitution in lieu thereof of a fixed scale of uniform charges which is applied to each job whose performance is proposed. The results of the cost-accounting system are employed solely for the purpose of varying this scale of charges in order to approximate it as nearly as possible to average cost.

The problem before the Government Printing Office differs from that presented in a commercial establishment

in some particulars. The office is provided with a complete and costly plant situated in a government building. No effort is made to allow for interest on the capital involved in this building or in the original establishment of the plant which it contains. These are regarded as given quantities. What the office seeks to do is to find out how much is being spent upon the repair and maintenance of machinery and tools that are worn out, upon the acquisition of new supplies and stores, and upon the purchase of labor from week to week. It then endeavors to apportion these costs to the various divisions in which they are incurred. Before going into the strictly cost accounting features of the work, it is worth while to devote some attention to certain more general aspects of Government Printing Office accounting.

Beginning before the actual entry of supplies into the office, a system has been devised for keeping account of orders. This is known as the "order record." In it are compiled all purchase orders after the same have been made up and approved in due form. These purchase orders are recorded upon one side of the book, while upon the opposite side in similarly headed columns are recorded the quantities of goods actually received in response to the orders that have been sent out to private contractors from whom the goods are bought. When goods enter the Government Printing Office they are examined, and a so-called "receiving ticket" is made out and certified by the storekeeper and by a board of inspection. These tickets constitute the source from which the receiving side of the order book is posted, just as the purchase orders furnish the raw material from which the purchase side or order is made up. It frequently happens that a given consignment contains more or less than the precise amount that has been ordered. In that event the amount actually received is recorded, and in a subordinate book provision is made for a separate account with "overs" and "unders"

Jacket made up by ____________ Corrections by ____________

GOVERNMENT PRINTING OFFICE

JACKET INFORMATION SLIP

Jacket No.
Req. No.

Date

Index

Dept. Ordering

Bureau

Title ____________

PREVIOUS JACKET NOS.

Authority

No. Authorized

QUANTITY Form No.

Proof ______ Sets ______

Deliver Proof to ______

QUANTITY	DEPT	REQ. NO.	BINDING MEMO.

COMPOSITION ______

Type Measure ______

Rule ______ Run from Type ______

Rack No. ______ Section ______ Keep Standing ______

Electrotypes Stereotypes

Illustrations ______ Div. ______ Req. No. ______

Maps ______ Half-tones ______ Text Figs. ______

PRESSWORK ______

Ink ______

No. of Pages ______ No. of Forms ______

Sig. Mark ______

Numbering ______ to (Inclusive) ______ Color ______

Cover ______ Perforating ______

Property No.	REAMS	SHEETS	COLOR	KIND OF PAPER	SIZE	WT	PRICE 100 Shts.

Size ______

Cutting ______ Counting ______

Wrapped ______

Deliver to ______

BINDERY OPERATIONS

EDITION ______

No. {Leaves / Pages} ______ No. Sigs. ______

Size ______ x ______

Folding ______ Interleaving ______

Gumming or Tipping ______ Pasting ______

Gathering ______ Collating ______

Sewed ______ Cased ______

Style of Binding ______

Canvas Covers ______ Labels ______

Lettered on Side ______ Lettered on Back ______

Gold, Aluminum, or Ink ______

Head Band ______ Guards ______ Lining Paper ______

Stamping ______ Edging ______ Waste Papers ______

Paging ______ Indexing ______

Ruling ______ Numbering ______

Punching ______ Perforating ______

Tablets ______ Eyeleting ______

Pads Tagging

Work will be performed on this Jacket in—
- Composing and Proof Reading Section ______
- Foundry ______
- Press Room ______
- Folding Room ______
- Bindery ______

FIGURE 2

SUMMARY OF LABOR CHARGES

Composition and Proof Reading, $ ________
Foundry, ________
Presswork, ________
Folding, ________
Binding, ________
Miscellaneous, ________
Grand Total $ ________

Register No. ________ Jacket ________
Bill No. ________ Req. ________

TITLE

____

IF DEPARTMENTAL

Department ________
Bureau ________

IF CONGRESSIONAL

Official No. of Doc. or Report ________
Committee having authority to print ________
By what authority printed ________
Copies authorized ________
Distribution ________

Received ________ Delivered ________
Size ________ Copies printed ________
Paper pages ________ Type pages ________
Total printed type pages ________

REMARKS

____

REQUISITION AND ESTIMATE BLANK TO REMAIN IN THIS JACKET 10—918

COMPLETE CHARGES.

Composition ________ ems @ ________
Composition ________ hrs. @ ________
Composition ________ extra for ________
Total charge ________
Making-up and imposition ________ forms @ ________
________ sigs. @ ________
Chargeable alterations and corrections ________ hrs. @ ________
Electrotyping ________ pages @ ________
Stereotyping ________ pages @ ________
Presswork ________ imprs. @ ________
________ @ ________
________ hrs. @ ________
Folding and inserting plates ________
Covering ________
Total charge for printing ________
ILLUSTRATIONS:
________ Half-tones ________
________ Line cuts ________
________ Maps (____ x ____) ________
________ Col. plates (____ x ____) ________
Total for illustrations ________
PAPER OR ENVELOPES: Per 100
________ Sheets Stock No. ________ $ ________
________ Sheets Stock No. ________ $ ________
________ Sheets Stock No. ________ $ ________
________ Sheets Stock No. ________ $ ________
________ Env's Stock No. ________ $ ________
BINDING:
________ Copies cloth ________ @ ________
________ Copies half leather ________ @ ________
________ Copies misc. ________ @ ________
Tablets (____ x ____) No. ________ @ ________
Ruling ________
Cutting and wrapping ________
Outside purchase ________
Miscellaneous ________
Rush and overtime work charge ________
Contract or agreement work ________
Total charge ________

Estimate $ ________

FIGURE 2A

in order that it may be possible at all times to know the precise relation between gross orders and gross receipts and their value. By posting the separate accounts in this way and carrying down the totals, it is possible at any moment to ascertain the obligations of the office accurately. In paying for goods ordered, vouchers are made up after each order record has been audited and completed. This voucher is then sent to the private contractor and is certified by him, after which it is returned to Washington, where it is signed, and a check is made out and sent to the public printer for his signature. A voucher register is kept, and in this all such vouchers are recorded. From it direct postings are made to the purchasing ledger. What amounts to a cash book is kept as a so-called "disbursement book." After the checks are drawn in payment for supplies they are duly entered in this book. The same is done with the results of pay-rolls, and the postings are then made to the "treasury ledger" under the respective appropriation headings which have been followed by Congress in assigning money for the Government Printing Office, as for example, "printing and binding, 1908." This assigns the disbursements of a given period to the appropriation upon which they constitute a draft. In accounting with employes, pay-rolls are made up in the following manner: A daily time slip is turned in from each of the "sections" and "branch offices" into which the different divisions of the printing office are sub-classified. The total number of such sections or branch offices is about fifty. In each case the time slip is certified by the man in charge of the section in which it originates. When these slips have been received by the accounting division they are transferred to a time roll, upon which are shown the amounts due to each employe over a period of two weeks for work done and for annual leave which he has chosen to take during that period. At the end of two weeks, the suitable amount, based upon the employe's time is paid

to him in currency, and he personally signs the pay-roll indicating that he has received the amount. The only distinction recognized in grouping the payments on pay-roll account is that between "printing and binding" and "annual leave," actual work being paid for out of the first, and "time off," up to the amount annually allowed, out of the latter. At the end of each month both pay-rolls and vouchers are sent to the Treasury, and are there audited and filed.

In keeping account with property the main reliance is placed upon a system of card records, on which are shown the amounts of each class of supplies received by the office and by it issued upon suitable requisition to the several divisions or sections. Orders for supplies are sent out as a result of a "Stores Alarm Slip." This so-called "slip" is herewith reproduced, (Figures 1 and 1a). It may originate anywhere in the printing office, but must be approved or disapproved by the immediate superior of the employe in charge of any division or section in which it starts. Whenever the stock of an article on hand has been reduced to the maximum point representing the amount that will be required until a new supply can be obtained, or whenever a new article is wanted, the alarm slip is to be started. This slip after being duly approved exhibits the description of the article, the quantity wanted, the quantity on hand, and a number of other items of information. It also provides for specifications which are to be written in, and gives instructions as to the way in which purchases are to be made. When the supplies have been received and duly approved by the officials who make up the ticket, the amount of the supplies thus in hand is recorded on the cards to which reference has already been made. Similarly, when stores are issued, the amount issued from each consignment of goods is recorded upon the back of the card relating to that consignment at the price per unit which was paid when the goods were purchased. In this way a

continuous inventory is kept, showing the quantities of each class of supplies on hand, and this is checked from time to time from an actual inventory taken in the stores division.

The office carries a combined record of supplies issued in a so-called "issue book." Entries in this book are made from slips which constitute orders upon the storekeeper for supplies. By posting the issue book from the slips in question it can be seen exactly what stores have been called for and have been furnished after approval of the requisition to each division. This gives a compiled comparative statement of the amount of stores issued to each section of the office, classified under headings showing how they have entered into product maintenance, etc.

The subject of cost accounting in the Government Printing Office can best be approached by considering the way in which goods are ordered by the several executive departments, and estimates made in response. Supposing that a given bureau or department has a specified piece of work which it is desired to have done, it may fill out a blank requesting information from the printing office with reference to the cost. At the office a so-called "estimate for printing and binding" is then made up, which is practically a bid on the work. This slip affords detailed data concerning the cost of paper used, the amount needed, the cost of the various bindery operations, the cost of composition and press work, and so forth. These items of information are supplied by the experts of the office through consideration of the job in comparison with the fixed scale of charges of the office which has been prepared for the guidance of the experts in just such cases. Supposing that the estimate is satisfactory to the department which ordered the estimate made, the printing office is directed to proceed, and the appropriate instructions are given. In the course of the operation a so-called "jacket information slip" is worked out. This jacket information

Form No. B 88.

ABSTRACT OF STORES ALARM SLIP.

________________ DIVISION ALARM NO. ______

DATE ____________, 190__

QUANTITY AND ARTICLE ________________________

THE TIME RECEIVED SHALL BE STAMPED IN EACH DIVISION.

No. ________

GOVERNMENT PRINTING OFFICE

STORES ALARM SLIP.

THE BASIS FOR MAKING ALL PURCHASES EXCEPT ILLUSTRATIONS

This Alarm Slip must not be destroyed or pigeon-holed, and when once started must reach its destination. READ INSTRUCTIONS ON OTHER SIDE

This Alarm Slip may be started by any official or employee in charge of any division or section, but must be approved or disapproved by his immediate superior; and before being forwarded must receive the approval or disapproval of the foreman of the division which pertains.

Whenever the stock on hand of an article has been reduced to the maximum point to last until a new supply can be obtained, or if a new article is wanted, this Alarm Slip is to be started. When issuing supplies the Storekeeper should remind the Property Clerk by memorandum that supply is down to ordering point, or vice versa.

If in the opinion of the Purchasing Agent the article called for on this Alarm Slip can in any way be changed to the advantage of the service, he shall at once bring the matter to the attention of the Public Printer by memorandum attached hereto.

THIS SLIP ORIGINATED AS ________________ DIV. ALARM NO. ______

DATE ____________, 190__

CONTRACT ITEM NO.	QUANTITY	UNIT	DESCRIPTION OF ARTICLE

I CERTIFY THAT THE ABOVE ARTICLE IS URGENTLY NEEDED, AND IS TO BE USED AS FOLLOWS:

____

____

(Forward to Property Clerk.) ____________ IN CHARGE ______

DATE ____________, 190__

RECOMMENDATION. ________________________

(Forward to Deputy Public Printer.) ____________ { SUPT. OF WORK. SUPT. OF DOCUMENTS.

DATE ____________, 190__

RECOMMENDATION. ________________________

(If disapproved, forward to Public Printer.) ____________ DEPUTY PUBLIC PRINTER.

DATE ALARM SLIP RECEIVED ____________ | PURCHASE ORDER NO. ____________

DATE OF PURCHASE ORDER ____________ | DATE OF DELIVERY ____________

ORDERED FROM ________________________

As soon as Purchase Order covering this Alarm Slip is drawn, forward the original to the contractor and one copy to the originator for his guidance and information, one copy to Storekeeper, one copy to the Accounting Division, and one copy to Property Records Division, retaining a copy in the Purchasing Division.

Form No. B 86.

FIGURE 8)

INSTRUCTIONS.

If this Alarm Slip originates in the office of the Secretary, Congressional Clerk, Cashier or Paymaster, Attorney, Purchasing Agent, Accountant, or the Deputy Public Printer, forward direct to the Public Printer.*

If this Alarm Slip originates in the Work Division, which includes the office of the Superintendent of Work, or the Documents Division, which includes the office of the Superintendent of Documents, it will receive the approval or disapproval of the Superintendent of Work or the Superintendent of Documents before leaving their divisions.

It is left to the discretion of any official at any time to ask for the data or certification called for from the Property Clerk and Stock Keeper.

ON CONTRACT ITEMS,* when this Alarm Slip is approved, the Purchasing Agent will proceed with purchase, provided such action will not cause the maximum amount of stock carried to be exceeded by more than 10 per cent, or the purchase is made for a special job of printing or binding, otherwise the Purchasing Agent will forward the Alarm Slip to the Public Printer for approval before the purchase order is drawn.

ON OPEN-MARKET PURCHASES,* and exclusive of emergency requirements, all quotations received on account of this Alarm Slip must be opened at a specified hour in the presence of a committee designated for that purpose, when they are examined, notated, and submitted to the Purchasing Agent, who makes a recommendation of award, and, when approved by the Public Printer, a purchase order is placed by the Purchasing Agent.

ON EMERGENCY PURCHASES,* to be made in the open market, the Purchasing Agent shall proceed with the least possible delay to purchase, in accordance with the provisions of law, such quantity of the article called for in this Alarm Slip as may, in his judgment, be necessary for the best interests of the Government and to relieve the emergency; and, should the price of the article exceed $100, it shall be approved by the Public Printer before the purchase is made.

* In the absence of the Public Printer Alarm Slips for contract items and open-market and emergency purchases will be initialed by the Attorney, or, in his absence, by the person designated to act for him, before being forwarded to the Deputy Public Printer for approval.

Date ____________ Maximum ____________

Quantity on hand when S. O. No. ________ was entered, ____________

Last supply on Purchase Order No. ________ Quantity ________

Unit price ________ Cost F. O. B. G. P. O., $ ________

Estimated total cost F. O. B. G. P. O., $ ____________ (This item must always be filled in.)

(Forward to Stores Division.) ____________ Property Clerk.

Date ____________ 190__

I certify that issues amounting to ____________ have been made since S. O. No. ________ was entered and that the actual amount in stock is ____________

(Forward to proper official.) ____________ Stock Keeper.

Recommendations when necessary of Storekeeper.

____

____

____

SPECIFICATIONS.

____

____

____

____

____

____

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____

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Figure 14.

slip carries elaborate data regarding the methods, and detailed manufacturing operations, which must be performed in carrying through the job. On the back of the information slip is given a detailed analysis of the charges for the job, and also a "summary of labor charges," in which all outlays for labor are grouped as "composition and proofreading," "foundry," "presswork," "folding," "binding," and "miscellaneous." The various items of information are filled in from data which are furnished by the several sections of the office in a way presently to be indicated. It is to be noted that in every case the data thus supplied are in units of work performed while the costs recorded on the jacket information slip are in amounts which have been computed by figuring the cost of the different operations on the basis of the uniform scale already referred to, as applied to the quantity of work done on the job as reported. From this jacket information slip, when fully made up, a revised estimate of total cost is prepared. In a so-called "allotment book" a record is kept of the different jobs performed for the various bureaus and departments, information being given both of the original estimate, and of the final sum charged and applied against the appropriation allotted by Congress.

The nature of the jacket information slip can be easily understood from the reproduction herewith, (Figures 2 and 2a).

In order to get the information necessary in making up the jacket information slip, a system of reports on work has been devised by the public printer. These reports originate in the several divisions to which they pertain, as for example, foundry, folding room, composition and proofreading division, pressroom, cutting and packing division, bindery division, and building division. In each instance the fundamental forms are two in number, a "daily report of work" giving the name of the operator and the time spent on specified operations. On this slip each of

FOUNDRY.

DAILY REPORT OF WORK.

certify on my official oath that the time noted on this report is correct.

Date, ..., 190..

Name, ... No........

(Correct Jacket number and accurate time must be given.)

Jacket No.		Time.	Operation No. Also quantity when so ordered.
		A. M.	
	0	8.00	
	2	8.12	
	4	8.24	
	6	8.36	
	8	8.48	
	10	9.00	
	12	9.12	
	14	9.24	
	16	9.36	
	18	9.48	
	20	10.00	
	22	10.12	
	24	10.24	
	26	10.36	
	28	10.48	
	30	11.00	
	32	11.12	
	34	11.24	
	36	11.36	
	38	11.48	
	40	12.00	
	42	12.12	
	44	12.24	
	45	12.30	
		P. M.	

	Check hourly rate here.												Total.
Wage per hr.	.15	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.80	$..........

....

(Foreman's O. K.)

Figure 3A

Jacket No.		Time.	Operation No. Also quantity when so ordered.
		P. M.	
	45	12.30	
	46	12.36	
	48	12.48	
	50	1.00	
	52	1.12	
	54	1.24	
	56	1.36	
	58	1.48	
	60	2.00	
	62	2.12	
	64	2.24	
	66	2.36	
	68	2.48	
	70	3.00	
	72	3.12	
	74	3.24	
	76	3.36	
	78	3.48	
	80	4.00	
	82	4.12	
	84	4.24	
	85	4.30	
	86	4.36	
	88	4.48	
	90	5.00	
		P. M.	

OPERATIONS.

34. Electrotype molding.
35. Battery work.
36. Backing up.
37. Straightening.
38. Operating finishing machine.
39. Revising.
40. Correcting.
41. Repairing press plates.
42. Joining rules.
43. Solid body work.
44. Making accents.
45. Stereotype molding.
46. Stereotype casting.
47. Making slugs, leads, and furniture.
48. Casting ingots.
49. Any operation not on list—to be written in.
50. *Clerical, helper, messenger, or laborer work.*
51. *Waiting time* (not allowed unless employe first reports this fact to chief).
52. INDETERMINABLE.

Figure 3A (continued)

Figure 3 A.

ABSTRACT OF LABOR CHARGES. **Foundry.**

Date of Req., ..., 190.. Dept., ... Bureau No., ... Jacket No., ...

Name.	Date.	OPERATION NUMBERS.																				Total Hours.	Per Hour.	Total Charge.
....	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	......	$....	$........
....	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	......	......	....
....	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	......	......	....
....	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	......	......	....
....	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	......	......	....
....	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	......	......	....
																							Grand Total...............	....

Figure 3 B.

GOVERNMENT PRINTING OFFICE.

Distribution of labor charges on work computed during month of ...., 19.........

Day. of Month.	No. of Jackets Computed.	Composition	Foundry.	Presswork.	Binding.
....	....	....	....	....	....
....	....	....	....	....	....
....	....	....	....	....	....
Total.................		....	....	....	....
Total of salaries and wages and materials and supplies.		....	....	....	....
Profit (+) or loss (—)....		....	....	....	....

Figure 3 C.

the principal operations is assigned a given number, as for instance, "79. Folding." In the main body of the slip appears a blank for the number of the "jacket" to which the operation belongs, and a series of numbers dividing the day into periods of six minutes each. A blank is left for the recording of the number of the operation. On a completed slip, therefore, appear data as to the name of the operator, the approximate time at which he has begun and discontinued a given operation (which is specified by number), and the rate of wages per hour. The second fundamental blank is intended to assemble the results of the daily report of work, and is entitled "abstract of labor charges." This is prepared by the officer in general charge of the work, and gives the totals which have been arrived at by the individual employes themselves as recorded on their daily report of work. Inasmuch as the work has already been classified by principal operations, it is easy to group the total cost of each operation as derived from the several individual daily time slips in the abstract of labor charges. The slips, however, are used only in cases where the product cannot be measured in a more economical way by a single individual acting for all. One abstract of labor charges is made out for each jacket information slip, being numbered accordingly. The combined results of the labor charges supply the information for filling up the slip in those divisions of the slip which relate to labor. The portions which relate to paper are filled in from the requisitions which have been made for supplies to be used in preparing the given job. Miscellaneous items are covered from the general uniform scale. The final result of the information slip shows the combination of outlay for labor and outlay for supplies, the latter estimated at cost price, the former at the fixed scale of charges for work already referred to. At the end of each month a compiled statement is made up showing the "distribution of labor charges on work completed during month

of ...." From this comparisons can be made with the amount actually charged to the departments, and the uniform scale can from time to time be raised or lowered as occasion may demand. As illustrating this system for assigning labor costs, specimen forms are herewith reproduced (Figures 3A, 3B, and 3C).

Cost Analysis at the Mints.

One of the most clear-cut examples of the use of a system of cost accounting in the government service is found in the United States mints. The system was introduced as a result of the work of the Committee on Department Methods, which recommended that the methods of bookkeeping at the mints be adjusted with a view to detailed analyses of cost. Under the system then introduced a monthly report is returned by each of the mints of the United States to the Director of the Mint at Washington. Each of these reports is an abstract of the books of the mint for the preceding month, and inasmuch as the product of the establishment is uniform, and costs are readily segregated, the system has easily been made to show the output of coin, the actual cost of each operation in gross, and the distribution of this cost per unit of coinage. Thus the Philadelphia Mint in its report discriminates between the weigh clerk's office, deposit melting room, deposit assaying department, calculating department, refinery, sweep cellar, assay department, engraving department, ingot melting room, rolling, cutting and annealing department, adjusting and weighing department, upsetting, coining and delivering department, and superintendent's department. From the data thus furnished the cost per thousand pieces of each product is compiled. This then gives the cost per unit. By comparing this with the average cost per thousand pieces as obtained over a series of months and years, the actual running costs can be compared with what experience has shown they should be.

This system of accounting involves a careful and elaborate classification of operations. For example, in the refinery there is reported first of all the product classified into fine ounces of gold and fine ounces of silver. The costs are then classified as follows: (a) labor, (b) melting and refining in general, (c) leave, (d) crucibles, (e) mitts and gloves, (f) acids, (g) fuel, (h) furnace repairs, (i) mechanical repairs, (j) incidentals, (k) electrical current, (l) chemicals, (m) sweep cellar, (n) assays, and (o) light and ventilation. The aggregate divided by the number of fine ounces gives the cost per fine ounce, which, by comparison with former months, shows the relation between these costs and the average cost per fine ounce. In the assay department product is reported as "number of assays made," which is divided among "deposits," "ingots," "refinery," and "miscellaneous." The costs in the assaying department are divided between (a) labor, (b) leave, (c) material, (d) fuel, (e) mechanical repairs, (f) power, and (g) light and ventilation. These costs are then distributed among the four groups into which the number of assays made is sub-classified. The ingot assays are then distributed to the denominations of coin, as double eagles, half eagles, etc. From this is derived the cost per assay which can then be compared with the average cost per assay as shown by former reports.

It is thus seen that the sole object of the cost-accounting system in use at the mints is that of distributing labor charges and material charges to the various classes of coin and other products turned out, for the purpose of making comparisons with an average standard. The system is pronounced exceedingly satisfactory, and has afforded a very much better analysis of mint operations than was practicable prior to its introduction. A rough general distribution of costs was always practicable owing to the simplicity of the manufacturing operations performed while the non-commercial character of the mints made it less neces-

sary from any immediate standpoint to know the relative outlays on each operation. It has been found, however, that the comparative analyses rendered possible by the new system make strongly for good administration, and render it possible to locate sources of unnecessary or excessive cost.*

Statistical Costs.

An excellent example of what can be done in estimating and apportioning the cost of statistical work in the government service has recently been afforded by the Census Bureau.† This office, after considerable investigation, has finally developed a complete plan for keeping track of the outlays on pay-roll and for classifying at the end of each month the various objects to which the money expended has been devoted.

The cost-accounting system of the Census Office is based upon the idea that every outlay made through the pay-roll is for a distinct object, and must be reported in connection with that object. Each member of the Census Office staff is assigned a number, and makes out a daily time slip, upon which appear certain facts. The time slip contains blanks for the name of the employe, the number assigned him, the division of the office in which he works, the number of his clerical class (whether 1st, 2d, 3d, etc.), and absences if any. Upon the slip are also given spaces to be filled in with the number of the inquiry upon which the employe is engaged, the character of the work, and the amount of time spent. On the back of the slip appears a classification giving seven main operations representing the work of the office as follows: (1) field work; (2) labor;

* The foregoing account of the cost system of the mints is based upon information kindly furnished by Hon. Frank A. Leach, ex-Director of the United States Mint, who has supplied the writer with the detailed data of which the text furnishes a brief summary.

† For detailed data and explanations concerning the cost-keeping system of the Census Bureau I am indebted to Hon. W. S. Rossiter, Chief Clerk of the Census, who has had charge of the introduction of the system.

(3) miscellaneous clerical; (4) publishing; (5) statistical; (6) stenography and typewriting; (7) supervisory. Each of these main topics is largely subdivided, there being about forty sub-classifications, into some one of which the labor of each clerk will fall. It does not follow of course that a given clerk spends his whole daily time upon any one subject. Usually he will perform labor which is classifiable under two or more of these sub-heads. In that event he must record upon his daily report the amount of time spent on each operation, showing the distribution between the several classes of work. After the slips have been made up as above indicated, they are carefully examined by the time clerk of the division in which they originate, for the purpose of detecting any inconsistencies or manifest errors. They are then sent to the cost-accounting section. It should be noted that in cases where clerks are absent from the office on leave, or are out upon the road engaged in field work, a slip is made out for each by the time keeper of the division to which each belongs, and is sent in with the other slip. When all the slips have been received in the cost-accounting section the clerks in charge of that section punch cards representing the data which are presented upon each slip. This punching process is the same which was followed in the last decennial census and is performed by the use of the so-called Hollerith machine. The cards in question are printed with a series of columns showing the date, the office or field of the worker, the employe, the division in which employed, the grade of the clerk, the inquiry to which attached, the character of the work done, the time employed, the rate per hour paid, and the total amount paid. Under each of these headings the appropriate data are represented by numbers, and inasmuch as each employe, division, grade, inquiry, character of work, etc., has a definite number previously assigned to it, it is thus possible to record numerically by punch marks in the appropriate squares the

data which has been recorded in words upon the daily time slip. After the cards have been punched they are sorted into groups according to rates of pay, and then according to time employed. The sorting is simply done by grouping together all cards which have uniform punch marks in the sections referred to (rate of pay and time), needles being thrust through the appropriate holes as the cards stand stacked in order to see that all are punched in the same area. If they are so punched, they belong to the same group, while if others not so punched have been included, the needles will not pass through completely, and it is necessary to withdraw certain cards, which have erroneously been thrown into this group.

The work thus done gives a money classification, and practice has shown that the results correspond to within $100 per month with the results shown by the pay-roll, the latter amounting to about $58,000 monthly.* It would be possible to make the system register to a cent by going sufficiently into detail, but this has not been thought necessary. The next operation is to sort the cards by fields and classes of work. The processes are simply those of sorting and adding after the manner already indicated, but for the purpose of obtaining different groupings or classifications. These groupings and classifications have been designed to show the head of the Census Bureau exactly where the money that has been paid out has gone—that is to say, for what specific objects it has been expended. In order to give these data, tabular forms showing the seven classes already referred to (supervisory, statistical, publishing, field work, stenography and typewriting, miscellaneous clerical, and labor with an eighth "administrative") have been ruled. After the cards have been separated into groups according to these main classes of work,

* This figure applies to the expenses of the bureau in "ordinary" years, that is, years when the regular decennial census is not in progress. When the decennial census is going on, the outlay is much larger.

all those belonging in the various sub-classifications being of course grouped under the main head to which they belong, they are totaled by the usual statistical methods, and the results are recorded, under the headings described, as "Table 1," on which are shown the corresponding results for the similar month of the preceding year. "Table 1A" has the same headings, but is represented in percentages for the purpose of showing the relationship between the different groups of work. "Table 2" has the same headings, but is limited to the "cost of inquiries in progress, by specified classes of work." "Table 2A" shows under the same headings as before the per cent which the cost of inquiries in progress by specified classes of work forms of the total expenditures. "Table 3" is made out separately for each inquiry which is in progress, and shows under the familiar headings the distribution of costs upon that particular investigation. "Table 4" is limited to "productive labor," which includes all except the "administrative" and "supervisory" divisions. "Table 4A" gives under the same heads as the last the percentage which the cost of productive labor forms of total expenditures. "Table 5" is limited to "non-productive labor," which, as we have seen, includes the supervisory and administrative groupings. In making the distribution of the cost of non-productive labor, however, separate columns are provided for the director's division, chief clerk's division, disbursements and appointments division, library, and correspondence and mailing. "Table 5A" gives these same data in percentages. "Table 6" is designed to show the cost of annual leave by specified classes of work. The subdivision is here made on the original seven groups already referred to, the entries being those which relate to the leave granted the employes in each division. "Table 6A" gives the same data as "Table 6" in the form of percentages. "Table 7" gives the same grouping for the cost of sick leave by specified classes of work, and "Table 7A"

the percentage which cost of sick leave by specified classes of work forms of the total pay-roll distribution. As already stated, these tables are prepared each month, and within three days of the opening of a new month are furnished to the head of the office for study and comparison.

Effect of Changes.

The general effect of the changes in accounting method which have been discussed in the foregoing pages has been good. Both these and other innovations have operated to put the service of the Government upon a much more businesslike basis than has heretofore been characteristic, and have been merely the outward manifestation of a spirit of greater attention to detail, and desire to get results in economy and efficiency that has transformed some of the branches of the Government in an almost radical way. No one would suppose for a moment that the public service is as yet upon a basis of full efficiency, or that it could compare in quickness or economy of results with even moderately successful business houses. But enough has been done to hold out hopes of improvement in the future to those who believe in thorough and conscientious work. The ideals of the public service are not and never will be identical with those which prevail in the commercial world. The standard of payment is not the same, nor is the object of accounting and other forms of organization the same in the government department as it is in the private business. Reduction of costs of operation, uniformity of expenditure and accounting method, and proper safeguards against unusual extravagance or official peculation may reasonably be looked for. These the federal administration is now in a fair way to secure

SECTION D.

CORPORATION TAX REGULATIONS.

Regulations relating to the assessment and collection of the special excise tax imposed by Section 38, act of August 5, 1909, on corporations, joint stock companies, associations, and insurance companies.

Section 38 of the act of August 5, 1909, is as follows:

Sec. 38. That every corporation, joint stock company or association, organized for profit and having a capital stock represented by shares, and every insurance company, now or hereafter organized under the laws of the United States or of any State or Territory of the United States or under the acts of Congress applicable to Alaska or the District of Columbia, or now or hereafter organized under the laws of any foreign country and engaged in business in any State or Territory of the United States or in Alaska or in the District of Columbia, shall be subject to pay annually a special excise tax with respect to the carrying on or doing business by such corporation, joint stock company or association, or insurance company, equivalent to one per centum upon the entire net income over and above five thousand dollars received by it from all sources during such year, exclusive of amounts received by it as dividends upon stock of other corporations, joint stock companies or associations, or insurance companies, subject to the tax hereby imposed; or if organized under the laws of any foreign country, upon the amount of net income over and above five thousand dollars received by it from business transacted and capital invested within the United States and its Territories, Alaska, and the District of Columbia during such year, exclusive of amounts so received by it as dividends upon stock of other corporations, joint stock companies or associations, or insurance companies, subject to the tax hereby imposed: *Provided, however,* That nothing in this section contained shall apply to labor, agricultural or horticultural organizations, or to fraternal beneficiary societies, orders, or associations operating under the lodge system, and providing for the payment of life, sick, accident, and other benefits to the members of such societies, orders, or associations, and dependents of such members, nor to domestic building and loan associations, organized and operated exclusively for the mutual benefit of their members, nor to any corporation or association organized and operated exclusively for religious, charitable, or educational purposes, no part of the net income of which inures to the benefit of any private stockholder or individual.

Second. Such net income shall be ascertained by deducting from the gross amount of the income of such corporation, joint stock company or association, or insurance company, received within the year from all sources, (first) all the ordinary and necessary expenses actually paid within the year out of income in the maintenance and operation of its business and properties, including all

charges such as rentals or franchise payments, required to be made as a condition to the continued use or possession of property; (second) all losses actually sustained within the year and not compensated by insurance or otherwise, including a reasonable allowance for depreciation of property, if any, and in the case of insurance companies the sums other than dividends, paid within the year on policy and annuity contracts and the net addition, if any, required by law to be made within the year to reserve funds; (third) interest actually paid within the year on its bonded or other indebtedness to an amount of such bonded and other indebtedness not exceeding the paid-up capital stock of such corporation, joint stock company or association, or insurance company, outstanding at the close of the year, and in the case of a bank, banking association, or trust company, all interest actually paid by it within the year on deposits; (fourth) all sums paid by it within the year for taxes imposed under the authority of the United States or of any State or Territory thereof, or imposed by the government of any foreign country as a condition to carrying on business therein; (fifth) all amounts received by it within the year as dividends upon stock of other corporations, joint stock companies or associations, or insurance companies, subject to the tax hereby imposed: *Provided,* That in the case of a corporation, joint stock company or association, or insurance company, organized under the laws of a foreign country, such net income shall be ascertained by deducting from the gross amount of its income received within the year from business transacted and capital invested within the United States and any of its Territories, Alaska, and the District of Columbia, (first) all the ordinary and necessary expenses actually paid within the year out of earnings in the maintenance and operation of its business and property within the United States and its Territories, Alaska, and the District of Columbia, including all charges such as rentals or franchise payments required to be made as a condition to the continued use or possession of property; (second) all losses actually sustained within the year in business conducted by it within the United States or its Territories, Alaska, or the District of Columbia not compensated by insurance or otherwise, including a reasonable allowance for depreciation of property, if any, and in the case of insurance companies the sums other than dividends, paid within the year on policy and annuity contracts and the net addition, if any, required by law to be made within the year to reserve funds; (third) interest actually paid within the year on its bonded or other indebtedness to an amount of such bonded and other indebtedness, not exceeding the proportion of its paid-up capital stock outstanding at the close of the year which the gross amount of its income for the year from business transacted and capital invested within the United States and any of its Territories, Alaska, and the District of Columbia bears to the gross amount of its income derived from all sources within and without the United States; (fourth) the sums paid by it within the year for taxes imposed under the authority of the United States or of any State or Territory thereof; (fifth) all amounts received by it within the year as dividends upon stock of other corporations, joint stock companies or associations, and insurance companies, subject to the tax hereby imposed. In the case of assessment insurance companies the actual deposit of sums with State or Territorial officers, pursuant to law, as additions to guaranty or reserve funds shall be treated as being payments required by law to reserve funds.

Third. There shall be deducted from the amount of the net income of each of such corporations, joint stock companies or associations, or insurance companies, ascertained as provided in the foregoing paragraphs of this section, the sum of five thousand dollars, and said tax shall be computed upon the remainder of said net income of such corporation, joint stock company or association, or insurance company, for the year ending December thirty-first, nineteen hundred and nine, and for each calendar year thereafter; and on or

before the first day of March, nineteen hundred and ten, and the first day of March in each year thereafter, a true and accurate return under oath or affirmation of its president, vice-president, or other principal officer, and its treasurer or assistant treasurer, shall be made by each of the corporations, joint stock companies or associations, and insurance companies, subject to the tax imposed by this section, to the collector of internal revenue for the district in which such corporation, joint stock company or association, or insurance company has its principal place of business, or, in the case of a corporation, joint stock company or association, or insurance company, organized under the laws of a foreign country, in the place where its principal business is carried on within the United States, in such form as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall prescribe, setting forth (first) the total amount of the paid-up capital stock of such corporation, joint stock company or association, or insurance company, outstanding at the close of the year; (second) the total amount of the bonded and other indebtedness of such corporation, joint stock company or association, or insurance company at the close of the year; (third) the gross amount of the income of such corporation, joint stock company or association, or insurance company, received during such year from all sources, and if organized under the laws of a foreign country the gross amount of its income received within the year from business transacted and capital invested within the United States and any of its Territories, Alaska, and the District of Columbia; also the amount received by such corporation, joint stock company or association, or insurance company, within the year by way of dividends upon stock of other corporations, joint stock companies or associations, or insurance companies, subject to the tax imposed by this section; (fourth) the total amount of all the ordinary and necessary expenses actually paid out of earnings in the maintenance and operation of the business and properties of such corporation, joint stock company or association, or insurance company, within the year, stating separately all charges such as rentals or franchise payments required to be made as a condition to the continued use or possession of property, and if organized under the laws of a foreign country the amount so paid in the maintenance and operation of its business within the United States and its Territories, Alaska, and the District of Columbia; (fifth) the total amount of all losses actually sustained during the year and not compensated by insurance or otherwise, stating separately any amounts allowed for depreciation of property, and in the case of insurance companies the sums other than dividends, paid within the year on policy and annuity contracts and the net addition, if any, required by law to be made within the year to reserve funds; and in the case of a corporation, joint stock company or association, or insurance company, organized under the laws of a foreign country, all losses actually sustained by it during the year in business conducted by it within the United States or its Territories, Alaska, and the District of Columbia, not compensated by insurance or otherwise, stating separately any amounts allowed for depreciation of property, and in the case of insurance companies the sums other than dividends, paid within the year on policy and annuity contracts and the net addition, if any, required by law to be made within the year to reserve fund; (sixth) the amount of interest actually paid within the year on its bonded or other indebtedness to an amount of such bonded and other indebtedness not exceeding the paid-up capital stock of such corporation, joint stock company or association, or insurance company, outstanding at the close of the year, and in the case of a bank, banking association, or trust company, stating separately all interest paid by it within the year on deposits; or in case of a corporation, joint stock company or association, or insurance company, organized under the laws of a foreign country, interest so paid on its bonded

or other indebtedness to an amount of such bonded and other indebtedness not exceeding the proportion of its paid-up capital stock outstanding at the close of the year, which the gross amount of its income for the year from business transacted and capital invested within the United States and any of its Territories, Alaska, and the District of Columbia, bears to the gross amount of its income derived from all sources within and without the United States; (seventh) the amount paid by it within the year for taxes imposed under the authority of the United States or any State or Territory thereof, and separately the amount so paid by it for taxes imposed by the government of any foreign country as a condition to carrying on business therein; (eighth) the net income of such corporation, joint stock company or association, or insurance company, after making the deductions in this section authorized. All such returns shall as received be transmitted forthwith by the collector to the Commissioner of Internal Revenue.

Fourth. Whenever evidence shall be produced before the Commissioner of Internal Revenue which in the opinion of the Commissioner justifies the belief that the return made by any corporation, joint stock company or association, or insurance company, is incorrect, or whenever any collector shall report to the Commissioner of Internal Revenue that any corporation, joint stock company or association, or insurance company has failed to make a return as required by law, the Commissioner of Internal Revenue may require from the corporation, joint stock company or association, or insurance company making such return, such further information with reference to its capital, income, losses, and expenditures as he may deem expedient; and the Commissioner of Internal Revenue, for the purpose of ascertaining the correctness of such return or for the purpose of making a return where none has been made, is hereby authorized, by any regularly appointed revenue agent specially designated by him for that purpose, to examine any books and papers bearing upon the matters required to be included in the return of such corporation, joint stock company or association, or insurance company, and to require the attendance of any officer or employe of such corporation, joint stock company or association, or insurance company, and to take his testimony with reference to the matter required by law to be included in such return, with power to administer oaths to such person or persons; and the Commissioner of Internal Revenue may also invoke the aid of any court of the United States having jurisdiction to require the attendance of such officers or employes and the production of such books and papers. Upon the information so acquired the Commissioner of Internal Revenue may amend any return or make a return where none has been made. All proceedings taken by the Commissioner of Internal Revenue under the provisions of this section shall be subject to the approval of the Secretary of the Treasury.

Fifth. All returns shall be retained by the Commissioner of Internal Revenue, who shall make assessments thereon; and in case of any return made with false or fraudulent intent, he shall add one hundred per centum of such tax, and in case of a refusal or neglect to make a return or to verify the same as aforesaid he shall add fifty per centum of such tax. In case of neglect occasioned by the sickness or absence of an officer of such corporation, joint stock company or association, or insurance company, required to make said return, or for other sufficient reason, the collector may allow such further time for making and delivering such return as he may deem necessary, not exceeding thirty days. The amount so added to the tax shall be collected at the same time and in the same manner as the tax originally assessed, unless the refusal, neglect, or falsity is discovered after the date for payment of said taxes, in which case the amount so added shall be paid by the delinquent corporation, joint stock company or association, or insurance company, immediately upon notice given by the collector. All assessments shall be made and the several corporations, joint stock companies or associations,

or insurance companies, shall be notified of the amount for which they are respectively liable on or before the first day of June of each successive year, and said assessments shall be paid on or before the thirtieth day of June, except in cases of refusal or neglect to make such return, and in cases of false or fraudulent returns, in which cases the Commissioner of Internal Revenue shall, upon the discovery thereof, at any time within three years after said return is due, make a return upon information obtained as above provided for, and the assessment made by the Commissioner of Internal Revenue thereon shall be paid by such corporation, joint stock company or association, or insurance company immediately upon notification of the amount of such assessment; and to any sum or sums due and unpaid after the thirtieth day of June in any year, and for ten days after notice and demand thereof by the collector, there shall be added the sum of five per centum on the amount of tax unpaid and interest at the rate of one per centum per month upon said tax from the time the same becomes due.

Sixth. When the assessment shall be made, as provided in this section, the returns, together with any corrections thereof which may have been made by the commissioner, shall be filed in the office of the Commissioner of Internal Revenue and shall constitute public records and be open to inspection as such.

Seventh. It shall be unlawful for any collector, deputy collector, agent, clerk, or other officer or employe of the United States to divulge or make known in any manner whatever not provided by law to any person any information obtained by him in the discharge of his official duty ,or to divulge or make known in any manner not provided by law any document received, evidence taken, or report made under this section except upon the special direction of the President; and any offense against the foregoing provision shall be a misdemeanor and be punished by a fine not exceeding one thousand dollars, or by imprisonment not exceeding one year, or both, at the discretion of the court.

Eighth. If any of the corporations, joint stock companies or associations, or insurance companies aforesaid, shall refuse or neglect to make a return at the time or times hereinbefore specified in each year, or shall render a false or fraudulent return, such corporation, joint stock company or association, or insurance company, shall be liable to a penalty of not less than one thousand dollars and not exceeding ten thousand dollars.

Any person authorized by law to make, render, sign, or verify any return who makes any false or fraudulent return, or statement, with intent to defeat or evade the assessment required by this section to be made, shall be guilty of a misdemeanor, and shall be fined not exceeding one thousand dollars or be imprisoned not exceeding one year, or both, at the discretion of the court, with the costs of prosecution.

All laws relating to the collection, remission, and refund of internal-revenue taxes, so far as applicable to and not inconsistent with the provisions of this section, are hereby extended and made applicable to the tax imposed by this section.

Jurisdiction is hereby conferred upon the circuit and district courts of the United States for the district within which any person summoned under this section to appear to testify or to produce books, as aforesaid, shall reside, to compel such attendance, production of books, and testimony by appropriate process.

Article I.

The attention of collectors and others is specially called to the fact that the tax imposed by this section of the law

applies to all corporations, joint stock companies, associations, or insurance companies described (except those specifically exempted), without reference to the kind of business carried on, and that the tax is to be computed upon the net income of such corporations, joint stock companies, associations, and insurance companies, which shall be calculated by subtracting from the gross income received from all sources during the year certain deductions specifically set forth in the statute.

Every corporation, joint stock company, association, or insurance company not specifically enumerated as exempt shall make the return required by law, whether it may have net income liable to tax or not.

In the case of corporations, joint stock companies, associations, or insurance companies organized under the authority of the United States or any State or Territory thereof, including Alaska and District of Columbia, such net income relates not only to the business carried on within the confines of the United States, but to income received from business transacted in any foreign country as well. In case of corporations, joint stock companies, and associations organized under the authority of foreign countries the terms "Gross income," "Net income," and "Authorized deductions" relate only to business transacted within the United States or any State or Territory thereof.

Article 2.—Gross income.

The following definitions and rules are given for determining the gross income of the various classes of corporations:

1A. **Banks and other Financial Institutions.**—Gross income consists of the gross revenue derived from the operation and management of the business and property of the corporation making the return, together with all amounts of income (including dividends received on stock of other

corporations, joint stock companies, associations, and insurance companies subject to this tax) derived from all other sources, as shown by the entries on its books from January 1 to December 31 of the year for which return is made.

1B. **Insurance companies.**—Same as 1A above.

2. **Transportation companies.**—Same as 1A above.

3. **Manufacturing companies.**—Gross income received during the year from all sources will consist of the total amount, ascertained through an accounting, that shows the difference between the price received for the goods as sold and the cost of such goods as manufactured. The cost of goods manufactured shall be ascertained by an addition of a charge to the account of the cost of goods as manufactured during the year of the sum of the inventory at beginning of the year and a credit to the account of the sum of the inventory at the end of the year. To this amount should be added all items of income received during the year from other sources, including dividends received on stock of other corporations, joint stock companies, associations, and insurance companies subject to this tax. In the determination of the cost of goods manufactured and sold as above such cost shall comprehend all charges for maintenance and operation of manufacturing plant, but shall not embrace allowances for depreciation of property nor for losses sustained which are to be taken account of in ascertaining the net income subject to tax under the proper heading in the authorized deductions.

4. **Mercantile companies.**—Gross amount of income received during the year from all sources consists of the total amount ascertained through inventory, or its equivalent, which shows the difference between the price received for goods sold and the cost of goods purchased during the year, with an addition of a charge to the account of the sum of the inventory at beginning of the year and a credit to the account of the sum of the inventory at the

end of the year. To this amount should be added all items of income received during the year from other sources inclusive of dividends received on stock of other corporations, joint stock companies, associations, and insurance companies subject to this tax. In determining this amount, no account shall be taken of allowances for depreciation of property, nor for losses sustained which are to be taken account of in ascertaining the net income subject to tax under the proper heading in the authorized deductions.

5. **Miscellaneous.**—Gross income consists of the gross revenue derived from the operation and management of the business and property of the corporation making the return, together with all amounts of income (including dividends received on stock of other corporations, joint stock companies, associations, and insurance companies subject to this tax) derived from all other sources as shown by the entries on the books from January 1 to December 31 of the year for which return is made.

It will be noted from these definitions that gross income is practically the same as gross profits, the only difference being that gross income is more inclusive, embracing as it does not only gross profits of the corporation, joint stock company, and association itself, but also all amounts of income received from other sources. It is immaterial whether any item of gross income is evidenced by cash receipts during the year or in such other manner as to entitle it to proper entry on the books of the corporation from January 1 to December 31 for the year in which return is made.

Sale of capital assets.—In ascertaining income derived from the sale of capital assets, if the assets were acquired subsequent to January 1, 1909, the difference between the selling price and the buying price shall constitute an item of gross income to be added to or subtracted from gross income according to whether the selling price was greater

or less than the buying price. If the capital assets were acquired prior to January 1, 1909, the amount of increment or depreciation representing the difference between the selling and buying price is to be adjusted so as to fairly determine the proportion of the loss or gain arising subsequent to January 1, 1909, and which proportion shall be deducted from or added to the gross income for the year in which the sale was made. But for the purpose of determining the selling price, as provided in this section, there shall be added to the price actually realized on sale any amount which has already been set aside and deducted from gross income by way of depreciation as defined in article 4 and has not been paid out in making good such depreciation on the property sold.

Where a corporation is engaged in carrying on more than one class of business, gross income derived from the different classes of business shall be ascertained according to the definitions above applicable thereto.

Article 3.—Net income.

Net income shall be ascertained by deducting from the gross amount of the income of such corporation, joint stock company or association, or insurance company, received within the year from all sources, (first) all the ordinary and necessary expenses actually paid within the year out of income in the maintenance and operation of its business and properties, including all charges such as rentals or franchise payments, required to be made as a condition to the continued use or possession of property; (second) all losses actually sustained within the year and not compensated by insurance or otherwise, including a reasonable allowance for depreciation of property, if any, and in the case of insurance companies the sums other than dividends paid within the year on policy and annuity contracts and the net addition, if any, required by law to be made within the year to reserve funds; (third) interest actually paid within the year on its bonded or other indebtedness to an amount of such bonded and other indebtedness not exceeding the paid-up capital stock of such corporation, joint stock company or association, or insurance company, outstanding at the close of the year, and in the case of a bank, banking association, or trust company, all interest actually paid by it within the year on deposits. [In case of corporations, joint stock companies, and associations organized under the laws of a foreign country, "the proportion of its paid-up capital stock outstanding at the close of the year which the gross amount of its income for the year from business transacted and capital invested within the United States and any of its Territories, Alaska, and the District of Columbia bears to the gross amount of its income derived from

all sources within and without the United States"];* (fourth) all sums paid by it within the year for taxes imposed under the authority of the United States or of any State or Territory thereof, or imposed by the government of any foreign country as a condition to carrying on business therein; (fifth) all amounts received by it within the year as dividends upon stock of other corporations, joint stock companies or associations, or insurance companies, subject to the tax hereby imposed.

Section 38 further provides:

That in the case of a corporation, joint stock company or association, or insurance company, organized under the laws of a foreign country, such net income shall be ascertained (by making like deductions) from the gross amount of its income received within the year from business transacted and its capital invested within the United States and any of its Territories, Alaska, and the District of Columbia.

Also that:

In the case of assessment insurance companies the actual deposit of sums with state or territorial officers, pursuant to law, as additions to guaranty or reserve fund, shall be treated as being payments required by law to reserve fund.

Also (third paragraph) that:

There shall be deducted from the amount of the net income of each of such corporations, joint stock companies or associations, or insurance companies, ascertained as provided in the foregoing paragraphs of this section, the sum of five thousand dollars.

The net income, therefore, is the remainder of the gross income after making the specified deductions.

Article 4.—Deductions.

The specified deductions actually paid within the year, set forth in the statute and as described in article 3 preceding, shall include all proper items of expenses and charges under the respective heads as designated. The amount returned for ordinary and necessary expenses actually paid within the year out of income in maintenance and operation of the business and properties of the corporation should not, however, embrace allowances for depreciation of fixed property which are otherwise to be taken account of under the proper heading in the authorized deductions, nor expenses paid within the year and charged

* The matter included in brackets [ ] relates to interest actually paid within the year on "bonded or other indebtedness," and should be read in connection with the preceding provision (art. 3) relating to such interest paid by corporations, joint stock companies, etc., organized in the United States.

to such allowances for depreciation credited in the current year or in previous years. In ascertaining expenses proper to be included in the deductions to be made under this article, corporations carrying materials and supplies on hand for use should include in such expenses the charges for materials and supplies only to the amount that the same are actually disbursed and used in operation and maintenance during the year for which the return is made.

It is immaterial whether the deductions are evidenced by actual disbursements in cash, or whether evidenced in such other way as to be properly acknowledged by the corporate officers and so entered on the books as to constitute a liability against the assets of the corporation, joint stock company, association, or insurance company making the return.

Losses.—The deduction for losses must be in respect of losses actually sustained during the year and not compensated by insurance or otherwise. It must be based upon the difference between the cost value and salvage value of the property or assets, including in the latter value such amount, if any, as has in the current or previous years been set aside and deducted from gross income by way of depreciation as defined in the following section and not been paid out in making good such depreciation.

Depreciation.—The deduction for depreciation should be the estimated amount of the loss, accrued during the year to which the return relates, in the value of the property in respect of which such deduction is claimed that arises from exhaustion, wear and tear, or obsolescence out of the uses to which the property is put, and which loss has not been made good by payments for ordinary maintenance and repairs deducted under the heading of expenses of maintenance and operation or in the ascertainment of gross income. This estimate should be formed upon the assumed life of the property, its cost value, and its use. Expenses paid in any one year in making good ex-

haustion, wear and tear, or obsolescence in respect of which any deduction for depreciation is claimed must not be included in the deduction for expense of maintenance and operation of the property or in the ascertainment of gross income, but must be made out of accumulative allowances deducted for depreciation in current and previous years.

Article 5.—Inventories.

It will be noted that an inventory or its equivalent of materials, supplies, and merchandise on hand for use or sale at the close of each calendar year is essential in the case of certain corporations in order to determine the gross income, and in case of other corporations to determine their expenses of operation. Where such inventory or its equivalent was not taken at the close of the year 1908, a supplemental statement showing such inventory approximately must be submitted with the return on the regular form. Such supplemental statement shall be verified under oath by the treasurer or principal financial officer in submitting the same.

Where any item under any of the deductions is of an unusual nature a special explanatory note referring to such item shall be made and attached to the form at the appropriate place and made a part thereof by proper reference.

Paragraph 3 of said section 38 also provides:

And said tax shall be computed upon the remainder of said net income of such corporation, joint stock company or association, or insurance company, for the year ending December thirty-first, nineteen hundred and nine, and for each calendar year thereafter; and on or before the first day of March, nineteen hundred and ten, and the first day of March in each year thereafter, a true and accurate return under oath or affirmation of its president, vice-president, or other principal officer, and its treasurer or assistant treasurer, shall be made by each of the corporations, joint stock companies or associations, and insurance companies, subject to the tax imposed by this section, to the collector of internal revenue for the district in which such corporation, joint stock company or association, or insurance company, has its principal place of business, or, in the case of a corporation, joint stock company or association, or insurance company, organized under the laws of a foreign country, in the place where its principal business is carried on within the United States, in such form as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall prescribe.

Each return so made is required to set forth:

(a) The total amount of the paid-up capital stock of such corporations, joint stock companies or associations, or insurance companies, outstanding at the close of the year;

(b) The total amount of bonded and other indebtedness of such corporation, joint stock company or association, or insurance company, at the close of the year;

(c) The gross amount of the income of such corporation, joint stock company or association, or insurance company, received during the year from all sources, and if organized under the laws of a foreign country, the gross amount of its income received within the year from business transacted and capital invested within the United States and any of its Territories, Alaska, and the District of Columbia.

Such returns are also required to set forth the items claimed as deductions (Article 4), also the net income after such deductions have been made.

Article 6.

Under the authority conferred by this act forms of return have been prescribed, in which the various items specified in the law are to be stated.

Blank forms of this return will be mailed to collectors and should be furnished to every corporation, not expressly excepted, on or before January 1, 1910, and on or before January 1st of each year thereafter. Failure on the part of any corporation, joint stock company, association, or insurance company liable to this tax, to receive a blank form will not excuse it from making the return required by law, or relieve it from any penalties for failure to make the return in the prescribed time. Corporations not supplied with the proper forms for making the return should make application therefor to the collector of internal revenue in whose district is located its principal place of busi-

ness. Each corporation should carefully prepare its return so as to fully and clearly set forth the data therein called for.

Bookkeeping.—No particular system of bookkeeping or accounting will be required by the department. However, the business transacted by corporations, joint stock companies, associations, or insurance companies must be so recorded that each and every item therein set forth may be readily verified by an examination of the books and accounts, where such examination is deemed necessary.

Calendar Year.—As the law specifically provides that the tax imposed shall be computed on the net income during each "calendar year," returns of income based on any period other than the calendar year cannot be accepted.

Corporations organized during the year or going into liquidation during the year should nevertheless render a sworn return on the prescribed form.

Article 7.

Collectors will see that as soon as each return made by any corporation is received a record on Form 632 is made, setting out the name of the corporation making the return, the nature of the principal business transacted, the location of principal place of business, with net income reported, and the date on which such return was received. The date of receipt in each case will be noted in the last column of that form, in which column the list on which assessment is made will also be noted. For this purpose the column so used may be subdivided, or the date of receipt of such returns may be noted in red ink over the date entered therein as to such assessment list.

Any collector will, whenever it appears advisable to do so, request that a revenue agent be specially designated to collect and furnish this office with such other data as, in his judgment, is necessary to determine the actual amount of tax to be assessed against any corporation, joint

stock company, or association which under the law set forth in these regulations is required to make return.

Such returns are required to be made not later than March 1 of each year, and any failure to comply with the law in this regard should be at once reported by the collector to the Commissioner of Internal Revenue.

To enable collectors to determine whether all returns due have been received, a careful canvass of each district should be made, and all corporations, joint stock companies, and associations subject to the tax imposed should be listed as above directed.

Article 8.

For statistical purposes such corporations, joint stock companies, and associations are classified as follows:

Class A: Financial and Commercial.—Including banks, banking associations, trust companies, guaranty and surety companies, title insurance companies, building associations (if for profit), and insurance companies, not specifically exempt.

Class B: Public Service.—Such as railroads, steamboat, ferryboat, and stage-line companies; pipe-line, gas, and electric-light companies; express, transportation, and storage companies; telegraph and telephone companies.

Class C: Industrial and Manufacturing.—Such as mining, lumber, and coke companies; rolling mills; foundry and machine shops; sawmills; flour, woolen, cotton, and other mills; manufacturers of cars, automobiles, elevators, agricultural implements, and all articles manufactured wholly or in part from metal, wood, or other material; manufacturers or refiners of sugar, molasses, syrups, or other products; ice and refrigerating companies; slaughterhouse, tannery, packing, or canning companies, etc.

Class D: Mercantile.—Including all dealers (not otherwise classed as producers or manufacturers) in coal, lumber, grain, produce, and all goods, wares, and merchandise.

Class E: Miscellaneous.—Such as architects, contractors, hotel, theater, or other companies, or associations, not otherwise classed.

When classified as above indicated the names of the various corporations, companies, and associations will be listed alphabetically, and will be numbered consecutively (commencing with No. 1 in each class), and in forwarding returns or papers subsequently rendered or submitted by such corporations or companies collectors will see that the same have placed thereon the designating class letter and number corresponding with those noted on the lists herein required to be furnished.

Article 9.—Examination of Books, etc., by Revenue Agents.

Paragraph 4 of said section 38 provides:

Fourth. Whenever evidence shall be produced before the Commissioner of Internal Revenue which in the opinion of the Commissioner justifies the belief that the return made by any corporation, joint stock company or association, or insurance company, is incorrect, or whenever any collector shall report to the Commissioner of Internal Revenue that any corporation, joint stock company or association, or insurance company, has failed to make a return as required by law, the Commissioner of Internal Revenue may require from the corporation, joint stock company or association, or insurance company making such return, such further information with reference to its capital, income, losses, and expenditures as he may deem expedient; and the Commissioner of Internal Revenue, for the purpose of ascertaining the correctness of such return or for the purpose of making a return where none has been made, is hereby authorized, by any regularly appointed revenue agent specially designated by him for that purpose, to examine any books and papers bearing upon the matters required to be included in the return of such corporation, joint stock company or association, or insurance company, and to require the attendance of any officer or employe of such corporation, joint stock company or association, or insurance company, and to take his testimony with reference to the matter required by law to be included in such return, with power to administer oaths to such person or persons; and the Commissioner of Internal Revenue may also invoke the aid of any court of the United States having jurisdiction to require the attendance of such officers or employes and the production of such books and papers. Upon the information so acquired the Commissioner of Internal Revenue may amend any return or make a return where none has been made. All proceedings taken by the Commissioner of Internal Revenue under the provisions of this section shall be subject to the approval of the Secretary of the Treasury.

Article 10.—Assessment and Collection of Tax, etc.

Paragraph 5 of said section 38 provides:

Fifth. All returns shall be retained by the Commissioner of Internal Revenue, who shall make assessments thereon; and in case of any return made with false or fraudulent intent, he shall add one hundred per centum of such tax, and in case of a refusal or neglect to make a return or to verify the same as aforesaid he shall add fifty per centum of such tax. In case of neglect occasioned by the sickness or absence of an officer of such corporation, joint stock company or association, or insurance company, required to make said return, or for other sufficient reason, the collector may allow such further time for making and delivering such return as he may deem necessary, not exceeding thirty days. The amount so added to the tax shall be collected at the same time and in the same manner as the tax originally assessed unless the refusal, neglect, or falsity is discovered after the date for payment of said taxes, in which case the amount so added shall be paid by the delinquent corporation, joint stock company or association, or insurance company immediately upon notice given by the collector. All assessments shall be made and the several corporations, joint stock companies or associations, or insurance companies, shall be notified of the amount for which they are respectively liable on or before the first day of June of each successive year, and said assessments shall be paid on or before the thirtieth day of June, except in cases of refusal or neglect to make such return, and in cases of false or fraudulent returns, in which cases the Commissioner of Internal Revenue shall, upon the discovery thereof, at any time within three years after said return is due, make a return upon information obtained as above provided for, and the assessment made by the Commissioner of Internal Revenue thereon shall be paid by such corporation, joint stock company or association, or insurance company immediately upon notification of the amount of such assessment; and to any sum or sums due and unpaid after the thirtieth day of June in any year, and for ten days after notice and demand thereof by the collector, there shall be added the sum of five per centum on the amount of tax unpaid and interest at the rate of one per centum per month upon said tax from the time the same becomes due.

Upon the receipt and verification of the returns rendered, the tax as ascertained to be due will be assessed as above prescribed; and notice of such assessment will be given and subsequent demand made (if necessary) on Forms 17 and 21, respectively.

In case of failure to make returns within the time and manner required by the statute, or where the return rendered is found or believed to be incorrect, action in such cases will be taken, as provided in paragraph 4 of the law.

The additional tax imposed by paragraph 5 of the law for failure to make the required return, or for making a false or fraudulent return, will in all cases be assessed as therein provided.

Article 11.—Returns to Constitute Public Records.

Paragraph 6 of said section 38 provides:

Sixth. When the assessment shall be made, as provided in this section, the returns, together with any corrections thereof which may have been made by the commissioner, shall be filed in the office of the Commissioner of Internal Revenue and shall constitute public records and be open to inspection as such.

Article 12.—Penalties.

Paragraphs 7 and 8 of section 38 provide:

Seventh. It shall be unlawful for any collector, deputy collector, agent, clerk, or other officer or employe of the United States to divulge or make known in any manner whatever not provided by law to any person any information obtained by him in the discharge of his official duty, or to divulge or make known in any manner not provided by law any document received, evidence taken, or report made under this section except upon the special direction of the President; and any offense against the foregoing provision shall be a misdemeanor and be punished by a fine not exceeding one thousand dollars, or by imprisonment not exceeding one year, or both, at the discretion of the court.

Eighth. If any of the corporations, joint stock companies or associations, or insurance companies, aforesaid, shall refuse or neglect to make a return at the time or times hereinbefore specified in each year, or shall render a false or fraudulent return, such corporation, joint stock company or association, or insurance company, shall be liable to a penalty of not less than one thousand dollars and not exceeding ten thousand dollars.

Any person authorized by law to make, render, sign, or verify any return who makes any false or fraudulent return, or statement, with intent to defeat or evade the assessment required by this section to be made, shall be guilty of a misdemeanor, and shall be fined not exceeding one thousand dollars or be imprisoned not exceeding one year, or both, at the discretion of the court, with the costs of prosecution.

Article 13.—Certain Revenue Laws Made Applicable, and Jurisdiction Conferred on United States Courts to Compel Attendance of Witnesses, etc.

Paragraph 8 further provides:

All laws relating to the collection, remission, and refund of internal-revenue taxes, so far as applicable to and not inconsistent with the provisions of this section, are hereby extended and made applicable to the tax imposed by this section.

Jurisdiction is hereby conferred upon the circuit and district courts of the United States for the district within which any person summoned under this section to appear to testify or to produce books, as aforesaid, shall reside, to compel such attendance, production of books, and testimony by appropriate process.

Article 14.—Collection of Tax.

The tax assessed under the provisions of this act will be collected and will be receipted for on Form 1, as in the

case of other assessed taxes. Unless paid within the time fixed by the statute, notice and demand should be at once issued, and, in case of nonpayment, distraint proceedings should be instituted without delay.

THE FEDERAL CORPORATION TAX AND MODERN ACCOUNTING PRACTICE *

BY A. M. SAKOLSKI.

It is not uncommon in these days for legislatures to enact revenue measures in utter disregard of modern accounting principles. Unfortunately accounting terminology is frequently employed in tax legislation without reference to the proper meaning as applied in business practice. In the tax laws of many of the states, for example, "intangible assets" are defined as stocks, bonds, mortgages and other forms of securities, whereas in accounting practice the same term represents merely the "good-will, franchises, patent rights," etc., of a business. The definitions of "gross earnings," "profits," "income," "revenue," "capital," etc., are likewise frequently applied in taxation in a sense differing from the meaning ordinarily attached thereto by accountants. Disagreement and confusion in the use of accounting terms is common to much of the legislation relating to corporations. Moreover, the decisions of both the federal and the state courts as to the proper interpretation of accounting terms are exceedingly unsatisfactory and in many cases incompatible with business practice. Any attempt to harmonize them into a set of general rules and principles appears a hopeless task. At one time the Supreme Court of the United States† decided that "profits" are merely receipts over expenditures with no consideration given to depreciation. Other court decisions hold a contrary view, some agreeing to the established accounting principle that net profits are

* From Yale Review, February, 1910. Reprinted by permission of the editors of the Review and by courtesy of Dr. Sakolski.

† Eyster v. Centennial Board of Finance, 94 U. S., p. 503.

not finally determined until all losses due to waste, depreciation and obsolescence of both fixed and circulating assets are made good.

In view of the confusion existing in the definition and use of accounting terms by legislatures and the law courts, the recently enacted federal corporation tax law might be expected to meet with condemnation and disapproval on the part of business men and accountants. On July 8, 1909, just previous to the final passage of the Act, a number of the leading accounting firms addressed a letter to the Attorney-General calling attention to the radical defects of the measure, which they characterized as impossible of application and utterly out of harmony with modern accounting practice. The important provisions of the law to which objections have been raised are as follows:

Sec. 38. That every corporation, joint stock company or association, organized for profit and having a capital stock represented by shares, and every insurance company, now or hereafter organized under the laws of the United States or of any State or Territory of the United States or under the acts of Congress applicable to Alaska or the District of Columbia, or now or hereafter organized under the laws of any foreign country and engaged in business in any State or Territory of the United States or in Alaska or in the District of Columbia, shall be subject to pay annually a special excise tax with respect to the carrying on or doing business by such corporation, joint stock company or association, or insurance company, equivalent to one per centum upon the entire net income over and above five thousand dollars received by it from all sources during such year, exclusive of amounts received by it as dividends upon stock of other corporations, joint stock companies or associations, or insurance companies, subject to the tax hereby imposed; . . . .

. . . Such net income shall be ascertained by deducting from the gross amount of the income of such corporation, joint stock company or association, or insurance company, received within the year from all sources, (first) all the ordinary and necessary expenses actually paid within the year out of income in the maintenance and operation of its business and properties, including all charges such as rentals or franchise payments, required to be made as a condition to the continued use or possession of property; (second) all losses actually sustained within the year and not compensated by insurance or otherwise, including a reasonable allowance for depreciation of property, if any, and in the case of insurance companies the sums other than dividends, paid within the year on policy and annuity contracts and the net addition, if any, required by law to be made within the year to reserve funds; (third) interest actually paid within the year on its bonded or other indebtedness to an amount of such bonded and other indebtedness not exceeding the paid-up capital stock of such corporation, joint stock company or association, or insurance company, outstanding at the close of the year, and in the case of a bank, banking association or trust company, all interest actually paid by it within the year on deposits; . .

Aside from the protest against the requirement that the tax return cover the calendar year, the principal criticism of the measure from an accounting view-point is directed against the phraseology defining "net income." The language of the Act is so crude and the definitions so absurd and so contrary to accepted principles of accounting that it has been justly condemned as applicable only to the bookkeeping methods of the Middle Ages. The defects can be ascribed to hasty and careless legislation. Members of Congress, with but few exceptions, were utterly indifferent to the provisions of the bill, the belief prevailing that when handled by the executive and judicial branches of the Government, the measure would reach some final adjustment, or more likely, complete extinguishment. The official interpretation of the provisions concerns us more than the language of the Act itself.

In the letter of the accountants addressed to the Attorney-General, the objections to the proposed tax were shown to center about the provision requiring "net income" to be ascertained by deducting from the gross amount of income received, expenses actually paid, losses actually sustained and interest actually paid. The use of the expressions "actually paid" and "actually sustained" in the calculation of net income naturally created consternation among the accounting profession. Modern accounting, especially as regards the determination of net profits, rests upon the principle that "income" is to be distinguished from "receipts" and "expenses" from "disbursements." Prior to the advent of the corporate form of business organization, bookkeeping was concerned almost exclusively with tracing out the movements of cash. The accounts showed the amounts and the sources of cash received and the manner in which it was disbursed. The main purpose of the early accounting methods was the testing of the honesty of the employes handling cash. The gauging of the proprietors' profits or the results of individual transac-

tions was of secondary importance. In modern times this condition is reversed. Present day accounting aims to exhibit in correct and intelligible form the net gain or loss of business operations independent of the movements of cash therein. The tracing of the actual receipts and the actual disbursements of cash, though an important part of every accounting system, has no direct relation to the results of the business operations, and is absolutely no gauge of the net losses or gains incurred in a specific period of time. Profits may be earned, though not actually realized in cash. Items of expense are frequently incurred, though not yet due and not yet paid. These principles are so commonplace and so widely accepted by all acquainted with business affairs that an apparent attempt to insert in a tax measure an obsolete method of determining income justly arouses the bitterest opposition.

But, whatever may have been the motives or intentions in endeavoring to define by legal enactment a method of computing net income in direct violation of prevailing practice, certainly the interpretations of the objectionable provisions of the law by the Secretary of the Treasury demonstrate that effort is made in the application of the tax to comply with actual accounting practice. The situation is interesting in view of the conflicting opinions regarding the nature of the tax expressed by the Attorney-General and by the executive officials of the Treasury Department. The Attorney-General, in his reply to the accountants, stated that the proposed tax was not on "profits" but on "the entire net income over and above five thousand dollars received by the corporation subject to the law." The return, therefore, requires statements of actual receipts and payments, and not of profits "gained," expenses "incurred," interest "accrued" and losses "ascertained." The Secretary of the Treasury evidently does not approve of this view, which assesses the tax in as absurd a manner as when a poll tax is levied

according to the length of the individual's nose or the color of his eyes and the texture of his hair. The official instructions concerning the form of returns and the manner of assessing the tax specifically state that the tax is levied on net profits. The expression "net income" is used merely "because there can be no question as to it embracing amounts of income received from . . . any source, while there might be some question as to whether or not such items would be included in the expressions 'gross profits' or 'gross earnings.'"

A detailed study of the official regulations for making up the tax returns gives convincing evidence that it is the intention of the administrators of the law to interpret the provisions as far as possible in accordance with prevailing accounting principles. The Secretary of the Treasury, when considering the vexed question of interpreting the law, is reported to have consulted eminent accounting experts, who suggested or approved the rules and regulations drafted for the enforcement of the measure. The official definitions of the terms "gross income," "income," "profits," etc., conform very closely to the definitions commonly accepted by accountants and others concerned with business affairs. The application of the tax is thereby rendered much more practicable and effective than would have been the case had the opinions expressed by the Attorney-General been allowed to stand.

The official "softening" of the objectionable provisions of the law is accomplished partly through a classification of corporations subject to the tax according to the nature of their business. From each class a separate form of return is required. The classification is as follows:

(1) Banks and other financial institutions, including insurance companies.

(2) Transportation companies.

(3) Manufacturing corporations.

(4) Mercantile corporations.

(5) Miscellaneous corporations.

Under the law no special provision is made for mining corporations, and they are classed as manufacturing companies.

The definition of net income as required by law to be stated in the tax returns is adjusted to the nature of the business of each class. The rules prescribed are palpable efforts to correct the absurd accounting methods proposed in the law. The "gross income" of banks, insurance companies and transportation companies is officially defined as "the gross revenue derived from the operation and management of the business, together with all amounts of income . . . derived from all other sources." The word "revenue" is undoubtedly used advisedly in preference to "receipts." The Interstate Commerce Commission designates "revenue" as the gross earnings (i. e., receipts from operation), exclusive of "income" from investments and outside sources. Miscellaneous receipts are designated in the Interstate Commerce Commission schedules as "other income" and are not included under the operating revenues. In the tax returns, however, "gross income" has a wider application than is ordinarily implied in "gross revenue," since it embraces income received from all sources, including the profits from the sale of capital assets. Assuming transactions to be on a cash basis, the "gross income" of transportation companies, according to the tax returns, conforms very closely to actual cash receipts. In the case of banks and other concerns, however, where cash or an equivalent is the commodity dealt in, a decided distinction between gross revenue and gross receipts is intended in the prescribed methods of making up the tax returns.

In the case of manufacturing and mercantile corporations, the official interpretations clearly distinguish "gross income" from "actual receipts." "Gross income" of manufacturing concerns is defined as "the total amount ascertained through an accounting (through an inventory in the case of mercantile corporations) that shows the differ-

ence between the price received for the goods as sold and the cost of such goods as manufactured." The cost of the goods "shall be ascertained by an addition of a charge to the account of the cost of the goods as manufactured during the year, the sum of the inventory at beginning of the year and a credit to the account of the sum of the inventory at the end of the year." To the resulting balance, the items of other income or profit not already subject to the tax are to be added.

Though this method of accounting conforms to the prevailing practice, corporations making the return will experience serious difficulties from the requirement in the official regulations that in the gross income no account shall be taken of "allowances for depreciation of property nor for losses sustained which are to be taken account of in ascertaining the net income subject to the tax under the proper heading in the authorized deductions." The problem of correct depreciation accounting is extremely important in modern business operations, and an endeavor to apply specific methods, as we shall point out later, is bound to meet with serious opposition.

In reference to the statutory deductions by which net income is determined from gross income, the Treasury Department's regulations seem to controvert in every detail the language of the Act. The law as finally enacted specifically provides that "net income shall be ascertained by deducting from the gross amount of the income . . . received within the year . . . (first) all the ordinary and necessary expenses actually paid within the year out of the income in the maintenance and operation of its business and properties; (second) all losses actually sustained within the year and not compensated by insurance or otherwise, including a reasonable amount for depreciation . . . and (third) interest actually paid within the year on its bonded or other indebtedness to an amount of such bonded or other indebtedness not exceeding the paid-up capital

of the corporation." Heedless of the literal meaning of these provisions, which if carried out to the letter would have rendered the Act impossible of application, the Secretary of the Treasury interprets them in accordance with correct accounting principles. He admits that "to hold that the phrase 'actually paid within the year' requires evidence of actual disbursement in cash during the year, would prohibit anything like accurate returns being made by any corporation and would render it impossible to carry out the main purpose of the law." The authorized deductions, therefore, are made to include all expense items "acknowledged as liabilities by the corporation making the return and which are entered as such on the books from January 1st to December 31st." In other words, net income is to be "made up from the ledger and not from the cash book."

In ascertaining the "ordinary and necessary" expenses included under the authorized deductions, the manufacturing and mercantile corporations carrying supplies of materials on hand are instructed to include in such expenses and charges only the cost of the materials and supplies actually disbursed and used in the operations covering the year in which the returns are made. This is demanded by every sound system of accounting. The tax return, however, covers the calendar year—a provision not objectionable in itself, but one that is likely to cause considerable expense and inconvenience to corporations with fiscal years not coinciding with the calendar year. A correct statement of profits necessarily requires the taking of an inventory or its equivalent. This generally involves considerable expense, delay and inconvenience. The necessity of a special inventory because of the tax is a just source of complaint on the part of the corporations whose fiscal year differs from the calendar year. To avoid as much friction as possible in collecting the tax for the calendar year of 1909, the instructions issued by the Treasury De-

partment provide that "Where an inventory or its equivalent was not taken at the close of the year 1908, a supplementary statement showing such inventory approximately must be submitted with the return." No similar substitution of an inventory in succeeding years is permitted in the returns.

The requirement of a separate statement of depreciation expenses under the authorized deductions will likewise cause considerable inconvenience and difficulty to many corporations, necessitating in some instances complete alteration in the methods of computing depreciation, obsolescence and general deterioration of property. The methods of charging such losses vary with different concerns. In some industries expenses covering depreciation are intricately woven with the expenses of repairs and renewals, resulting in the absence of separate depreciation accounts. In others, again, the various kinds of depreciation and deterioration are charged to separate accounts. Some items of depreciation are properly included among the ordinary expenses of maintenance and operation, whereas other items are met by appropriations for new construction, betterments, etc., or are met by income from special sources not credited to the revenue account. No better illustration of the complex system of charging off depreciation or extinguishment of assets prevailing in a modern corporation is afforded than that of the United States Steel Corporation. The income account exhibited in the published reports of this gigantic industrial combination shows four general items of expense wholly or partly of the nature of depreciation or amortization charges. These are

(1) Sinking funds on bonds of subsidiary companies.

(2) Depreciation and extinguishment funds (regular provisions for the year).

(3) Extraordinary replacement funds (regular provisions for the year).

(4) Special replacement and improvement funds.

These items, though partly chargeable to capital account, on the ground of promoting increased efficiency and earning capacity, are considered by the managers to be a proper charge against current earnings. Whether, under strict accounting principles they would in all cases be allowed to stand as necessary depreciation expenses under the authorized deductions is largely a matter of opinion. Depreciation accounts, reserves and sinking fund accounts are not necessarily entries of actual and tangible transactions. They are records of provisions occasioned by current or prospective losses in value. The money value of the provisions therefore must at all times be estimated, the exact amount not being capable of absolute determination in advance. The estimates, however, should be based on expert opinion and the lessons of experience, and it is a matter of business policy with accountants to leave such matters to the managers and directors.*

The diverse methods of providing for depreciation in undertakings having comparatively simple and uniform

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* The annual report of the International Harvester Company contains a lucid explanation of the character of the depreciation and extinguishment charges in a modern corporation of large size and extensive activities:

"**Reserves for Plant Depreciation and Extinguishment:**

"The annual appropriations from earnings for depreciation and extinguishment reserves constitute the necessary provision for the impairment and consumption of the plant assets utilized in the output of the product and should prove sufficient to reproduce the properties as their replacement becomes necessary. Depreciation on plant property is based on rates established by recognized authorities. Amortization of ores is calculated at rates which will provide sinking funds sufficient to retire the whole of the Company's capital invested in mining properties before the extinguishment of the ore bodies. Timber depreciation is figured at the market values of stumpage for the various kinds of timber cut. This stumpage provision will equal the original cost of the timber properties when the present standing timber is exhausted, after allowing a fair residual value for the lands either for reforestry or for agricultural purposes.

"**Special Maintenance:**

"These reserves provide for relining of blast furnaces, maintenance of docks and harbors, and similar renewal work which is of a current nature, but which occurs at irregular intervals. To provide for the renewal when it becomes necessary the future cost of the work is apportioned over current operations. A reserve is also being created to provide for the elevation of certain railroad tracks in the city of Chicago, and an initial installment of $200,000.00 was set aside for this purpose in 1908."

operations such as the railroad companies was well exhibited when the Interstate Commerce Commission prescribed equipment depreciation accounts for railroads. The railroad companies most active in protesting against the keeping of such accounts were among the largest and best-equipped in the land. It was claimed on the part of some of these companies that the renewals and repairs to their equipment were made at a rate which tended to maintain the property at a uniform standard of efficiency at all times. Accordingly, there was no necessity for depreciation accounts on their books. A number of other railroads, including the Pennsylvania, the Baltimore & Ohio and the Norfolk & Western, provided for the depreciation of equipment largely through interest and sinking fund charges on their equipment obligations. Probably in no two important railroad systems were the methods of treating depreciation charges identical.

Although the purpose of a depreciation account is to show the amount set aside from current income for losses in the value of assets due to use or obsolescence, the methods of accounting for such losses vary according to the nature of the business and the judgment of the proprietors or accountants. Professor Lawrence Dicksee, in his standard work "Advanced Accounting," describes in detail six different methods of computing depreciation, each having advantages and disadvantages. Though for general accounting purposes all methods may be equally sound, the employment of one method rather than another may result in considerable disparity in the net income of different periods. The setting aside of a fixed amount each year to cover depreciation of an important group of assets, instead of varying the amount according to the actual estimated depreciation or the actual estimated earning capacity of the assets in question, can easily result in a difference in the net earnings of the business during one year large enough to determine whether or not the tax shall be

assessed. The claim may be properly made that a deficiency in net earnings in one year due to use of a varying annual rate of depreciation is offset by correspondingly increased earnings during other years, but unless it can be assumed that the tax will be fixed and permanent, this argument has no bearing on the problem under consideration.

With mining companies the question of a "reasonable" allowance for depreciation is extremely complex and difficult of exact determination. The actual depreciation of the machinery and equipment can be determined within moderate limits, but the actual diminution of value in resources due to production may baffle the wisest expert. No provision is made in the law for the progressive depreciation or amortization of mine properties, but it seems safe to conclude that the corporations can include an estimate of such charge in the expenses of the year.

The statutory requirement of a separation of depreciation charges from the ordinary and necessary expenses of operation and maintenance has an administrative advantage in gauging false returns. Unless, however, considerable freedom is permitted in estimating depreciation and similar expenses, serious friction and inconvenience will result.

The statutory provision concerning losses to be deducted from gross income covers losses that are "actually sustained." The expression "actually sustained" has been severely criticised by accountants, on the ground that the correct amount of losses chargeable against the income of a year is frequently not ascertained until a subsequent period. The distinction between losses "sustained" and losses "ascertained" is of considerable importance in some industries. In transportation, in mining and in construction operations, the financial losses resulting from wrecks, accidents and other disasters are frequently not determined until after a series of adjustments or legal adjudications

extending over a period of years. It is the practice of many concerns to carry suspense accounts to cover liabilities of an uncertain nature. No provision permitting this, however, is found either in the law itself or in the regulations pertaining to its execution.

The use in the law of the expression "actually paid" in connection with interest charges, if applied literally in the execution of the Act, would have been a gross violation of modern accounting practice. Interest obligations are generally payable half-yearly, but the date of disbursement varies, not only with different corporations, but with different issues of securities of the same corporation. A corporation with interest charges payable at the end of January instead of December may show a different "actual" disbursement for the calendar year covered in the tax returns than is exhibited by the books of account. The omission from the financial statements of business concerns of liabilities accrued but not actually due or disbursed, is a fruitful source of fraud and deception. Accountants and auditors guard closely against this means of misrepresentation. Hardly two years ago a secretary of a public service corporation issued a statement of net earnings on June 1 for the previous five months, putting in all the items of earnings and expense for the time, but ignoring the accrued interest on $750,000 of 5 per cent bonds outstanding, on the ground that the coupons were not due until July 1 and were therefore not a liability at the time the statement was made up. The modern method of accounting, based on the system of accruals, is altogether contrary to this idea. It is the evident intention of the Treasury Department to follow accounting principles in spite of the phraseology of the law. "All expense items under the various heads acknowledged as liabilities by the corporations making the return are held to be proper deduction from gross income."

An interesting query arises as to whether liabilities ac-

knowledged by a corporation on account of unpaid cumulative dividends on preferred stock are a proper deduction from gross income. Cumulative dividends as a legal liability may differ in character from interest charges, but from a strict accounting point of view, the only distinction is that the payment of the dividends can be postponed indefinitely regardless of net earnings, whereas the interest charges are met from current income. In both cases, the charge is for the use of capital and remains a liability until paid. The general balance sheets of corporations ordinarily do not include back dividends on cumulative preferred shares among liabilities. This, however, is a matter of custom rather than reason. The indebtedness is a lien against surplus earnings and assets and is therefore a liability. In view of the accounting practice, there can be little doubt that in the returns made by corporations under the federal corporation tax law, no deduction from gross income on account of cumulative dividend charges will be permitted though such charges may be "acknowledged as liabilities" and are "so entered on the books as to constitute a liability against the assets of the corporation making the return."

Aside from the relations of the new corporation tax law to the general principles of accounting practice a number of minor though not altogether unimportant bookkeeping and accounting problems are involved in the assessment of the tax. These will undoubtedly call for formal decisions on the part of both the administrative officials and the courts. The complexity of corporate organization and corporate activities has rendered practically impossible the intelligent and accurate statement of the financial results of business corporations in the form of a brief schedule. Considerable latitude of variation from the exact facts in any particular case may result without a "wilful intent to defraud the Government of revenue." Almost every statement of profits of a going concern, no matter

how carefully and conscientiously drawn up is, at best, an estimate and not a statement of positive truth. Both English and American courts have held that inasmuch as the ascertainment of profits is necessarily a matter of estimate or opinion, "all that is required is that the estimates be fairly and honestly made without any fraudulent intention or purpose of deceiving anyone and that they conform to the constitution of the corporation."* It can hardly be expected, therefore, that in the determination of net income for the purpose of tax assessment, such processes as an inventory of the material on hand, the cost of finished or partly finished goods, the wear and tear of machinery and other equipment, liability to losses from bad debts, losses from obsolescence and extinguishment of assets, etc., etc., will be accounted for similarly in all corporations and will conform in every detail to actual fact. The earning of profits represents a continuous operation. Actual results can be definitely stated only when the business is wound up and all assets realized in the form of cash.

The great diversity in the methods and activities of business corporations underlies many of the difficulties to be met with in taxing their net incomes on an equitable basis conforming to accounting practice. The endeavor to obviate these difficulties by a simple classification of business corporations into categories can be only partially successful. The methods of accounting in large corporations are frequently impractical when applied to small concerns of the same class. Capitalized items of expense in one case may constitute proper charges against income in the other, and small capitalization may effect a showing of profits which would be entirely wiped out under a large capitalization.

Without attempting to cover in detail any or all of the accounting problems which may require adjustment in the assessment of the tax upon the net income of corporations,

* A. Lowes Dickinson: "The Profits of a Corporation."

a few will be selected as illustrations of the difficulties that may be expected in the application of a general tax on corporate incomes.

The treatment of extraordinary or extraneous income in the tax returns will undoubtedly be a source of controversy. Almost every corporation receives occasionally large items of income or experiences exceptional losses which are not the result, either directly or indirectly, of its operations. Such profits or losses may arise from the sale or transfer of fixed assets, from the issue or redemption of capital securities, or from the investment of special reserve or trust funds. The federal law imposing the tax on the income of corporations requires all such extraneous revenues to be added to the income of the year during which they are received and all such losses to be deducted. In the sale of fixed assets the regulations provide that

> "If the assets were acquired subsequent to January 1st, 1909, the difference between the selling price and the buying price shall constitute an item of gross income to be added to or subtracted from gross income according to whether the selling price was greater or less than the buying price. If the capital assets were acquired prior to January 1st, 1909, the amount of increment or depreciation representing the difference between the selling and buying price is to be adjusted so as to fairly determine the proportion of the loss or gain arising subsequent to January 1st, 1909, and which proportion shall be deducted from or added to the gross income from the year in which the sale was made."

This, as well as the further provision that to the price realized for the asset there should be added any amount previously charged to income which remains as a depreciation reserve to such asset, can cause no objection in theory. In practice, however, profits and losses of the nature described above are in many cases exceedingly difficult to determine. Frequently they do not appear in the income account at all, but are credited or charged directly to a reserve or an asset account. Where the losses are large, as in the dismantling of a whole plant or the abandonment of equipment rendered useless through unforseen circumstances, the total net income of the year may be wiped out and a serious deficit result. In such case it is

only fair for the corporation to provide for the loss gradually out of the profits of several years. Large profits arising from a similar source may likewise be equitably distributed over a period of years instead of being added in a lump sum to the net profits of a single year. The accounting of extraordinary gains and losses in this manner, however, although in harmony with business practice, is evidently not permitted by the regulations governing the imposition of the federal corporation tax.

The proper distribution of the gains and losses arising from the premiums received and the discounts paid in the issue of capital securities likewise have no consideration in the provisions relating to the tax. Discounts and premiums on securities issued are an addition to or a deduction from the interest rate charged for the use of capital. The amount thereof, accordingly, should not be charged or credited to the income of a single year. The common practice is to distribute the amount of the gain or loss over a period of years, conforming where possible to the period during which the securities are to remain an obligation of the corporation. It is very doubtful, however, whether this procedure will be permitted in the making up of the tax returns.*

The payments on account of sinking funds and amortization will also have an important bearing on the accounting procedure to be observed in making up the tax returns. Where sinking funds are accumulated for the purpose of debt extinguishment without reference to corresponding waste or reduction in the value of assets the payments theoretically are not a proper charge against current income. However, because of the practice of inserting provisions in trust deeds requiring the sinking fund payments

* Court decisions have held that premiums received from the issue of capital securities constitute a part of the capital of the corporation and as such are not divisible as profits among the shareholders. Premiums received from the issue of stock and bonds are usually added to the surplus of a corporation, thus becoming a part of working capital in fact as well as in theory.

to be charged to current profits in the same manner as interest, such charges in many cases are regarded as proper deductions from gross income before net income is finally determined. In order to have the tax returns conform to correct accounting principles, it is essential that the sinking fund provisions be construed in accordance with their intent. If the payments represent merely a depreciation provision, they may be construed as proper deductions from gross income. On the other hand, if the payments represent obligatory reduction or extinguishment of debt without corresponding reduction on the value of assets, they should have no place in the tax returns. The regulations of the Treasury Department contain no instructions relative to an analysis of the purpose and intent of sinking fund payments. It may be assumed, however, that the corporations subject to the tax will be allowed much freedom in the matter.

A further question of correct accounting involved in the determination of the net income of corporations subject to the tax concerns losses imputed to a decline in the market value of current assets. An established rule of accounting requires current assets such as raw materials, manufactured goods, etc., to be valued at cost or market value, "whichever is the lowest." A decline in market value below cost is chargeable against the business. Different methods of accounting for the loss are employed, the procedure varying according to the nature of the assets in question and the character of the business. The decline in market value may be merely a fluctuation and not a permanent loss in value. The policy of many corporations is to account for such reductions in market value through the creation of reserves among their liabilities equal to the difference between the market (inventory) value and the cost value. Charging the profits of the year with an uncertain loss is thus avoided. In making up their returns for the assessment of the tax, corporations may claim the

privilege in some years of deducting from the gross income the full amount of loss represented by the declines in the market value of current assets, without crediting the profits of other years with the recovery of such losses. How far such practices will result in evasion of the tax may never be determined. Concerns having on hand large supplies of commodities such as iron ore, cotton, grain, etc., which are subject to sharp fluctuations in market price, will have ample opportunity to adjust the returns to suit their purposes.

A problem of no small importance in relation to corporation profits at the present time and one that may be ignored entirely in the assessment of the tax is the treatment of the so-called "paper profits." Such profits are not realized in the form of cash or its equivalent and are accordingly not brought into the revenue statement of the corporation. These profits arise usually in the exchange of assets or in the redemption of liabilities. They may, however, be the result of the revaluation of assets or the receipt of stock dividends. Although the crediting of such profits directly to surplus does not affect the income account of the year during which the profits are "written" on the books, the actual income earned in future years may be affected whenever the increased value of the assets represented by the "paper profits" are realized in the form of cash through sale of the assets. In such an event the final realization of the "paper profits" would escape taxation, since no profits will be shown by the books of the corporation. Thus, a corporation exchanges securities of $1,000,000 cost value for other securities having no definite market value, but which are placed on the books by the directors at $1,500,000. The resulting "paper profit" of $500,000 is credited to the surplus account of the corporation, but inasmuch as nothing is received in the form of cash assets, the profit does not appear in the income statement of the year. Accordingly no tax can be assessed for

the amount. During the next year, however, the securities in question are sold at their book value. The "paper profit" which was credited to surplus the previous year thus becomes an actual profit and is available for distribution among the shareholders. The amount is not subject to the tax, however, for the books show no additional income during the year from the sale of the securities, but merely a transfer of assets. Evasions of this character would not be uncommon in these days, when many of the large corporations are holding companies, and mergers through exchange of securities are constantly taking place.

Many other instances may be cited of possible conflicts with modern accounting practice in the application of the federal corporation tax. It can hardly be expected that a revenue measure of as wide an application as the one under consideration can meet all the conditions arising from the complexity of modern business organization. It seems to be the administration's policy to interpret the provisions of the law as broadly and as liberally as is consistent with faithful execution, and corporations subject to the tax are not required to follow specific methods of bookkeeping in order to comply with the measure.

SECTION E.

PRIMER ON COST KEEPING.*

1. The Primer on Cost Keeping is based on the assumption that a system of cost keeping should prove of value to practically every administrative officer required by his position to judge of the relative efficiency of different men, appliances, and methods in the economical production of finished work.

2. The degree of refinement to which the analysis of costs in any system should be carried must be determined by experience. Certain general principles can, however, be laid down. If the system does not go sufficiently into detail, it is probable that discrepancies in the cost of identical products at different locations, under different conditions, handled by different employes, or produced by different methods, will not be indicated, and that the purpose of cost keeping will be defeated. If the system is too complex, it will be slow and heavy, may break of its own weight, and its results may be reached too late to apply corrective measures.

3. The successful system must be along lines coming within these limits, and for a beginning it is believed that it should be as simple as will secure results, with a view to its expansion along such lines as experience may show to be desirable. It should, however, be planned to have the cost accounts square in or be in agreement with the general fiscal records. The additional expense of such a detail is usually more than compensated for by the check thus afforded upon both systems and the additional re-

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* Originally prepared under the direction of a special committee appointed by President Roosevelt and here reproduced by permission of Hon. Lawrence O. Murray, chairman.

spect which cost data from such systems receive. While exact agreement is the accounting ideal, approximate agreement will secure valuable results; and if absolute accuracy can be obtained only at great expense such approximation may be sufficient.

4. In making the initial outline for a cost system it will be advisable to carry the analysis further along the line of the purposes or operations for which expense is incurred than along the line of the nature of the individual items of expense. Thus, in a scientific bureau it is of more importance to know the costs of the field investigations, the office investigations, the laboratory work, the computing, the editing, and the administration than to know the costs for services, travel, purchases, rentals, etc.

5. It is absolutely necessary in planning such a system to have in mind the scheme of organization upon which it rests. For this reason no uniform system is possible for organizations of different kinds. Such systems are at best only suggestive of others. If, however, it is desired to study some such systems and to note the relation of various forms devised to record the steps in the processes, the reader is advised to consult the two books by Horace Lucian Arnold, The Complete Cost Keeper, and The Factory Manager and Accountant. Probably neither of these systems could be adapted to the needs of any governmental organization, but these books and the others hereafter referred to are suggestive and valuable.

6. As the results are valuable, primarily, to the administrative officer in direct charge of the operations covered by the cost accounts, he should suggest the lines along which they should be kept, and should know of the steps followed in its processes, and thus he will be able to judge of its results. He need not prepare the forms or keep the records—bookkeepers and clerks will be available to perform such service—but he should be able to judge of the

quality of the work submitted upon the outline he has laid down.

7. Cost keeping is that branch of accounting which is concerned with the segregation of the various items of expense, incurred in the prosecution of a single piece of work, from among all other items of expense incurred in a general line of industry, and the setting over against the total of such segregated items the quantity of resultant work or product. The definition of cost keeping as a part of a general system of accounting can, perhaps, be made clearer by the following contrast, wherein under "Scope of general bookkeeping" we include all fiscal transactions of every class, and under "Scope of cost keeping" such transactions of each class as are necessary for a complete cost system for so much of the organization's operations as the system is intended to cover. Commercial accounting is more and more nearly approaching the ideal as to costs, but it is not yet the universal rule to have commercial bookkeeping show a complete analysis of the purpose of all transactions. Governmental bookkeeping, except in certain classes of accounts, has always been limited to a record of cash transactions, and when so limited excludes from its record all transactions resulting in accounts receivable or payable and all transactions wherein there is a transfer of property or of services without any corresponding transfer of money, either contemporaneously or subsequently.

General bookkeeping, as here used, includes every transaction which involves the fiscal condition of the organization.

SCOPE OF GENERAL BOOKKEEPING.	SCOPE OF COST KEEPING.
8. General bookkeeping is concerned with all A—resources; valuable assets of whatever nature available for use in the operations of any	10. Cost keeping, on the other hand, considers only those A—resources which are employed in the operations for which costs are sought, as the ma-

business, whether or not actually employed;	terials and supplies consumed and the plant employed, but not any unproductive capital which may be held for future use;
B—liabilities; indebtedness, without regard to how or when incurred;	B—liabilities, or portions thereof, which are incurred wholly for the given operations, as the indebtedness for materials and labor used, but nct borrowed capital, nor the indebtedness for unused material purchased against possible rise in price;
C—income; cash receipts, whether from earnings, borrowed funds, or other sources;	C—incomes which are drawbacks or direct repayments upon the elements of cost entering the given product as refunds of paid overcharges on any kind of expense entering the product, but not receipts for product previously manufactured and sold;
D—expenditures; cash disbursements, whether in payment for material and labor furnished, repayments of loans or dividends;	D—expenditures which are the measure of certain expenses incurred in producing the given output, but not payment of liabilities generally;
E—gains, whether resulting from productive operations, or from the enhanced value of assets either fiscal or material;	E—gains which are drawbacks as referred to under income, but not profits in general;
F—losses, whether resulting from productive operations or from other causes, as trade conditions, material disaster, litigations, etc.	F—losses which are industrial, such as depreciation of buildings and equipment, but not those which are commercial, such as bad debts, etc.

9. General bookkeeping as a rule considers the operations of an organization, both fiscal and industrial, as a whole or in large sections. Its entries cover, generally, the exchange of value between individuals or independent organizations. It does not take account of inventories of materials, of machinery, tools or equipment, of plant, or of other valuable assets; nor consider the questions of depreciation, fixed charges and liabilities accrued but not due, except at periods of profit taking.

11. Cost keeping considers the industrial operations of an organization in detail, but is not concerned in its purely fiscal transactions. Its entries cover the movement of values within the organization itself rather than between it and others. It must consider the inventories of all materials, plant, etc., from day to day, and take account of depreciation, fixed charges and liabilities accrued, in proportion to the charge which these expenses become upon the articles of the finished product.

12. The contrast between general commercial bookkeeping and cost keeping is not always clearly drawn. In fact, the two purposes are often attempted in one scheme of accounting where the product is practically uniform

and the operations are continuous. In such cases a good system of analytical bookkeeping is often sufficient when an analysis is made according to the purpose as well as the nature of the expense. For example, the accounts of all plants for the production and distribution of power, heat, light, or water can probably be best handled by such a method. Unit costs may be obtained by making a summation of the charges to certain accounts and measuring the amount of the product or output for the period covered by such accounts.

13. In the commercial world, profit is the test and measure of success. Profit is the excess of value received over the cost of producing and marketing. Competition makes price fixing a matter largely beyond the control of the producer; therefore, the possibility for increased profit lies only in a reduction of the cost of producing and marketing. Usually this cost is made up of various elements of expense, and it is necessary to get at the proportions and amounts of such elements in order to learn where it is possible to economize without injuring the product.

14. We thus come to the governing principle of cost accounting, which, by collating such information, enables the producer to know the amounts of the several elements of expense which have entered into the total cost of any piece of work, and from such information to develop more economical methods for the conduct of future operations.

15. From the standpoint of profit there does not seem to be the necessity for the study of costs in governmental work that there is in the commercial world, but the relation between the outlay of money and the return of valuable product is much the same in the government service as in private work. Results should be viewed in the light of their costs. In many instances public policy may require the Government to remain in enterprises not actual successes from the commercial point of view, viz, that of

producing articles as cheaply as they can be purchased. For instance, in the construction of fortifications or the manufacture of ordnance the Government might continue the present system in order to retain control of important information and plans, even if such fortifications could be built more cheaply by contract or the arms obtained more cheaply by purchase. But even in such cases the study of the component elements of expense and the attending conditions may eventually lead to such modifications of organization and methods as to turn a hitherto losing or expensive operation into an actually paying enterprise. Actual conditions must always be considered, and it is undoubtedly true that the Government cannot do all things in the same way that a private corporation or individual can do them. On the other hand, this very fact that there are differences in attending conditions may result in a failure to pay proper attention to the relation of outlays of money and the results obtained from such outlays.

16. Governmental cost keeping should aid in obtaining economical administration, in perfecting effective organization, and in estimating the expense for future operations along similar lines.

17. Comparatively little has been written upon cost keeping, because this subject is a very recent development in accounting, which has been born of the necessity of providing the very best information for the producers of this industrial age. A bibliography of the subject appears at the end of this primer. It is interesting to note that the earliest publication on the general subject was from the pen of an officer of the Ordnance Department United States Army, and had particular reference to the systems in use in the arsenals of the United States.

18. The first important step in cost keeping is to know the results for which the organization is working. Though as a matter of time the elements of expense come before

the finished product, yet it is necessary that the administrative officer who desires satisfactory cost accounts should in advance determine upon the lines which the cost keeping should follow. To do this he should consider the various articles of his finished product and thereafter analyze each into its several elements of expense, according to certain general classes hereafter set out.

19. Each government organization, according to its nature, exists for the purpose of producing a definite output. This product consists of certain valuable results—either those which are produced and are measurable in bulk and are not usually divided into separate physical units, or those which consist of many individually complete units. It is important to observe this classification, for it has a direct bearing upon the form of the accounting system which will best procure the costs of production of any organization.

20. For the first class, whose product is measurable in bulk and not usually divided into separate units, a system of analytical bookkeeping is sufficient, when such an analysis of the expenses has been made according to the purpose of the expenditure that the costs of various operations are obtainable from such accounts. Examples of this first class of organizations are scientific and investigating bureaus generally, and those for the production of power, heat, and light, for conducting transportation enterprises, and for each individually complete section or piece of work of the Engineer Department, the Isthmian Canal Commission, and the Reclamation Service.

21. For the second class, the units of whose product are individually complete, the system best adapted to procure satisfactory results is that known as factory cost keeping based upon individual production or "job" orders each for a separate item of output. Examples of this second class of organizations are the manufacturing ar-

senals, the naval bureaus of ordnance, equipment, etc., the printing offices, etc.

22. In addition to the foregoing general classification of all business enterprises into two groups according to the form of their products and the method of measuring them it is desirable also to classify governmental operations according to their nature. By so doing there becomes available for any line the experience gained by other bodies in the same general line, both governmental and commercial. Without such a grouping certain underlying similarities are often obscured by the superficial differences in detail. These classes are:

23. Manufacturing, which is the business of producing in a factory a large number of identical units of output of one or more kinds. Factories are divided into two classes:

A. Continuous process factories, which produce articles in bulk and in which the individual units are not in practice capable of identification as they pass through one or more continuous operations. Examples: Bureau of Engraving and Printing, in manufacture of postage stamps, and mints and assay offices of the Treasury Department; Bureau of Ordnance of the Navy Department, in the manufacture of explosives; and any power, heating, lighting, or water plants.

B. Varied process factories, which produce single units, each complete in itself, or groups of a definite number of units of output, and where it is practicable under ordinary conditions to measure the duration of each step in the production of such individual units or groups. The product of such varied process factories will usually contain elements which are the results of continuous processes similar to those of the former class of factories. Examples: Bureau of Engraving and Printing of the Treasury Department, in its miscellaneous printing; Ordnance Department of the War Department; Division of Mail Equipment of the Post-Office Department; Bureaus of Equip-

ment, Ordnance, and Steam Engineering of the Navy Department; Bureau of Standards of the Department of Commerce and Labor; Government Printing Office.

24. Construction, which is the business of producing outside of a factory a relatively large work, which, while composed of lesser units, makes only one complete product. It is of two general classes:

A. Continuous process construction, in which the output, consisting of excavation, grading, or masonry, is gradually and continuously produced without separation into individual units, and in which the work includes one or more continuous operations carried on under uniform conditions. Examples: Engineer Department and Signal Office of the War Department; Reclamation Service of the Interior Department; Isthmian Canal Commission.

B. Varied process construction, in which severally completed parts are assembled and brought into a structure under varying conditions and methods. Examples: Supervising Architect's Office of the Treasury Department; Quartermaster-General's Department of the War Department; Bureaus of Yards and Docks and Construction and Repair of the Navy Department.

25. Transportation, which is the business of carrying persons, property, or intelligence from point to point. Examples: Transport Service of the Army and Navy, Panama Railroad, the Postal Service, and the cable, telegraph, and telephone lines of the Signal Service. As a line of business it is confined to the profitable use of a plant previously secured and its expenses are principally for operation, maintenance, administration, depreciation of equipment, interest on investment, etc. The principles and general method of its accounting will apply also to those other enterprises which conduct the operation and movement of ships, etc., even though the purpose of such organization is not that of conducting transportation, as in the cases

of war vessels and auxiliaries, revenue cutters, light-house tenders, coast vessels, quartermaster's transports, etc.

26. Merchandising, which is the business of buying and selling, and which in government work includes the receipt after purchase or production and the issue by sale or requisition of valuable property from any of the many "stores" of the government service. The most notable examples are the stores of the Bureau of Supplies and Accounts of the Navy Department and the Commissary Department of the War Department, although every department and bureau and many divisions also have "stores" operating as above.

27. Investigation and Reports, which includes the collection of information, either in the field or office, and either from original study of existing conditions or by the collating of previously gathered information on file in various places. Examples: Bureau of Trade Relations of the State Department; Office of Commissioner of Education and Geological Survey of the Interior Department; Bureaus of Animal Industry, Chemistry, Foreign Markets, Plant Industry, Soils, Entomology, and Biological Survey, Office of Experiment Stations and Public Roads, and Forest Service of the Department of Agriculture; Bureaus of Corporations, Labor, Census, Statistics, Fisheries, and Standards and Coast and Geodetic Survey of the Department of Commerce and Labor.

28. Accounting and Records, which as a business would not stand alone, but is a necessary detail for the carrying on of actual productive enterprises, and which under governmental organization is often handled by practically independent bodies. Examples: Bureaus of Indexes and Archives, Accounts, Rolls, and Library, of the State Department; Offices of the Comptroller of the Treasury and the several Auditors, Treasurer, and Register of the Treasury Department.

29. Administration and Supervision, which would not

stand alone as an independent commercial operation, but is a necessary factor in the satisfactory conduct of productive enterprises, and which as the primary object of the executive branch of the Government makes many organizations practically separate from those which are directly productive. Examples: Diplomatic, Consular, and Passport Bureaus, of the State Department; Offices of Comptroller of Currency, Internal Revenue, Customs, Marine-Hospital and Life-Saving Services, of the Treasury Department; the military arm of the Army and Navy; Department of Justice; Offices of the Commissioners of Patents, Pensions, General Land, Indian Affairs, and Railroads, of the Interior Department; Steamboat Inspection Service, and the Bureaus of Navigation and Immigration, of the Department of Commerce and Labor; and the Interstate Commerce and Civil Service Commissions.

30. It appears that the work of every government organization can be set down as that of one or more of the foregoing seven classes. Many which have one line as their principal work may have incidental operations of one or more of the other classes. The last two, viz, Accounting and Records, and Administration and Supervision, are general, and every organization has both as all or some portion of its work, but these as classes are intended to cover only those organizations which are not, or but slightly, engaged in any one or more of the first five directly productive classes.

31. Costs of production of identical articles produced at different times have a value to the producer for purposes of comparison. Costs of different articles produced at one time are valuable for purposes of comparison in so far as the articles pass through some of the same processes. In general, it may be said that costs aid the producer (a) in fixing selling prices on finished product; (b) in fixing buying prices on material and labor entering into this product; (c) and, most important of all, in so adjusting operations

between the time of buying the material and labor and that of selling the finished product that there shall be the minimum of expense for such operations.

32. Cost has been defined as "loss of any kind," or "whatever is requisite to secure benefit." It must, therefore, be distinguished from disbursement, for it will also include any liability if the benefit therefrom has been used, even though the disbursement therefor has not been made. Conversely, disbursements made for benefits not used in producing the output of work are not yet a part of costs.

33. When cost keeping is adopted solely for reasons of economy and organization it may be sufficient to stop uniformly with any given proportion of the whole cost, as with the expenditures from specific current appropriations. Such results are comparable. When, however, it is desired to have costs for purposes of competition or comparison with the market prices on like output, or with the costs obtained in other government organizations, or when it is necessary to fix prices for sale of the product to outside parties, or to other government organizations, a total cost must be obtained, showing all expense of every kind, whether paid from past or current appropriations.

34. The relation of the disbursements and liabilities and other sources of benefit to the total available resources on the one hand, and of these same resources to the unused stores and other valuable assets and the costs of output on the other, can perhaps best be shown by the diagram on the following page.

From the diagram it can be seen that the total of the resources available, obtained by a summation of the items Nos. 1 to 6, less the total of items Nos. 7 to 9 (the inventories available for future use) and of item No. 10 (transfers gratis), leaves as a remainder item No. 11, which is the cost of the finished product.

Items Nos. 1 and 7 refer to the fixed plant, and the difference between their values represents the wear and

SOURCES OF REVENUE.
(Items charged to organization.)

1. Use of buildings and equipment (plant) obtained from former appropriations.

2. Unused stores on hand secured from former appropriations.

3. Unfinished product or results of work done from former appropriations.

4. Disbursements from and liabilities against current or future appropriations for the organization.

5. Disbursements from and liabilities against current or future appropriations for other organizations.

6. Property transferred and labor detailed from others "gratis."

Total resources available for and aiding in the productive work of the organization.

VALUABLE OUTPUT.
(Items credited to organization.)

7. Buildings and equipment (plant) purchased from former and current appropriations and available for future operations.

8. Unused stores on hand.

9. Unfinished product or results of work on hand for future operations.

10. Property transferred and labor detailed to others "gratis."

11. Finished product.

tear or depreciation of such plant, except in so far as it has been augmented or decreased during the period under review by transactions covered by items Nos. 4, 5, 6, or 10.

35. The expenditures for any enterprise while operated appear to be for a great variety of obligations, but with all their differences in details such obligations will all fall into one or the other of two classes, according to their character. The first class is that of stores or property, bought and owned, including not only substances of a tangible nature, visible to the eye, and capable of being handled, but also less evident articles of commerce, such as gas and power, purchased by measure. The second class is that of services, which includes the benefits derived from everything hired or leased, whether in the form of labor

of men and animals hired as individuals, or in the form of those services which are supplied in bulk, as rental, transportation, taxes, insurance, advertising, interest, contract or job work.

36. "Stores," or property, as indicated in the last paragraph, includes all property bought and owned. Such property appears to be capable of almost unlimited subdivision into the several elemental materials and the combinations thereof known to commerce; but if viewed from the standpoint of the use to which they are put, all stores or property are readily divided into three classes, as follows:

A. Materials.—Any property that enters into and remains a part of the finished product is a material. Materials are often referred to as raw material, but it should be noted that the finished product of one operation, sometimes called stock, often becomes the raw material of a subsequent operation, and is then designated in the latter organization as stores.

B. Supplies.—All property that is used upon and wholly consumed in the operations by which the finished product is made.

C. Plant.—All property employed in the operations by which the finished product is made, but which does not enter that product and is not consumed in such operations, excepting as to wear and tear. Plant includes real estate and improvements thereon, machinery (both fixed and movable), tools, instruments, vehicles, animals owned, etc.

37. The distinction between materials, supplies, and plant is not always an easy one to make in advance of their use, though when the articles are actually employed in productive operations there should be no difficulty in deciding into which class any article should go. In some instances the same substance is differently classified, according to the disposition that will be made of it. Timber may be sawed into lumber and become material for the manufacture of furniture or it may be transformed into

plant by the enlargement of the factory or it may be cut into cord wood and become supplies for use as fuel.

38. But whether it is easy or difficult in any case to draw the distinction between the three classes for stores, the reason for such distinction is sound. It is possible to measure the quantity of materials used in each article of the product, and there need be no estimate whatever. It is possible to measure the quantity of supplies used upon the product for a certain period, but an estimate is necessary in distributing such expense. It is impossible to measure accurately depreciation or wear and tear of plant, and both the amount of such expense and its distribution must rest on estimates. It is plain that most accurate results are obtained by so classifying expenses as to group those in which the elements of uncertainty and estimate are absent either at the minimum or at the maximum.

39. A loose use of the word "cost" in connection with stores makes it practically synonymous with purchase price. Such a use cannot, however, be permitted in connection with any system designed to obtain the costs of production. For this purpose the cost of stores must include every expense incurred upon the articles when delivered for the initial productive operation. Such cost will include the purchase price; buying expense, including the preparation and printing of specifications, advertising, salaries, commissions, and expenses of purchasing agents and assistants; transportation; inspection and testing; labor and cartage in and out of storehouses and the clerical labor connected with store records and the routine of issuing stores; rental of store buildings when leased or interest on investment in such buildings and depreciation thereupon when owned by the United States; but it is not believed that the element of expense involved in a possible interest charge on the money invested in unused stores carried for future use is of sufficient importance to warrant its inclusion in governmental cost keeping.

40. In other words, the prices to be charged on issued stores should be sufficient to cover every expenditure or liability incurred on account of such stores. When the storerooms are small and those in charge have other duties of a dissimilar character, it may be impracticable to include some of these different items and necessary to carry them into some general administrative account to be prorated therewith, but this method should be avoided whenever practicable.

41. "Services," as already pointed out, includes all those elements of value or benefit which are not bought and owned, but which are hired or leased. Services may conveniently be divided into two general classes, depending upon the manner in which they are secured, viz, individually or in bulk. The former includes all man and animal labor secured by the hire of individuals; the latter includes all services where the work is performed in whole or in part by others than the one agreeing to supply the labor. Examples of this class of services are job or contract work, transportation of persons, property, or intelligence, rental of buildings or equipment, advertising, insurance, taxes, interest, etc.

42. The distinction between these classes is not of the same importance in cost keeping as is that between the classes of stores, but it has a bearing upon the subject, because a large part of individual labor is directly productive and its benefits enter directly into and persist in the finished product somewhat like materials, while most of the bulk service, excepting contract work and transportation, is non-productive (indirectly productive) and its results are so consumed in the processes of producing the output as, like supplies, to be incapable of identification.

43. The cost of personal services, or compensation of employes, in the government service consists primarily of the pay proper, or salaries and wages, and this element is in all cases the principal and in many cases the only

cost of labor. In addition, compensation may consist of allowances for traveling expenses, mileage, quarters, subsistence, per diem allowance in lieu of subsistence, medical attendance, clothing, etc. There is a third element entering into the costs of labor in the government service, in that of lost time, which consists of time for which payment is made, but in which no work is done. The total varies in different branches of the government service. It may include Sundays, Saturday half holidays, regular holidays, annual leave of absence (which may in one instance at least be paid for when earned and not taken), and sick leave.

44. The cost of animal labor will include the agreed rate at which hired, the cost of forage, of stabling and care, including that of hostler, farrier, and veterinarian.

45. The cost of services secured in bulk is not often complicated with so many factors as is that of individual service. As a rule, such cost consists of a definite number of units of service at a fixed rate per unit. If an agreement also provides for a hold-back of a given percentage until the completion of all or a certain portion of the work the deferred liability because of such hold-back must be included to obtain a whole cost.

46. Whole cost or total cost has been differently considered, some persons embracing in it the entire expense, including that of marketing the product, while others have put into it only that expense necessary to bring it to the point where it is ready for sale or delivery. In the government service it seems better that all expense, including delivery, should be reckoned in as a part of the whole cost, inasmuch as the expense of marketing and delivery is a relatively normal and even one over all the articles of any one line of product.

47. This whole cost is uniformly divided into two parts, each of which has been known by various terms, as follows:

A. Direct charges, otherwise known as prime cost or

flat cost, which consist of the expense for a given product, of the material used in and remaining a part of that product, and the productive labor directly applied to it.

B. Indirect charges, otherwise known as top costs, or on cost, or general expenses, which uniformly include all administrative expense, marketing expense, and miscellaneous charges not directly assignable to any specific article of the product.

48. The factory burden is one element of cost which has been variously included under the direct or indirect charges. It includes depreciation, cost of power, heat and light, cartage, elevator service, watch, etc. Another element of cost is that for interest, taxes, insurance, or rentals. Theoretically, and practically from the commercial point of view, such expenses are means for the distribution of profits. In the government service there is no distribution of profits in the common forms of stock dividends or interest on bonds, and there is not, therefore, the necessity for treating interest as distributed profits, which should be done commercially. It and the other expenses enumerated above should be charged to separate accounts and finally distributed with the elements of the factory burden. As a general rule, it is better to limit the direct charges, or prime cost, to those elements of cost in which there is no uncertainty whatever, and into which there does not enter the personal equation of any sort of estimate. However, it is probable that satisfactory results can be obtained by making a direct charge for power and similar expenses in those lines where, because of the fact that there is not a great variety in the product which is produced under uniform and continuous operations, it is possible to assign these charges directly to the finished product.

49. In connection with this subject of the division of the elements of cost into the two classes of direct charges and indirect charges it must be noticed that these terms recur with every gradation of an organization through the

subordinate up to the superior body. In other words, the whole cost of any product of a division becomes a part of the direct charges or prime cost of the bureau in which the division's product of work is carried further or is combined with the work of other divisions into a completed product ready for the market.

50. Apportionment of indirect charges.—Various methods of apportioning the top cost are in use commercially. The following suggestions are necessarily general in character, but should serve to assist in determining the proper plan to be adopted:

A. Prorate the top cost to each operation upon basis of the direct labor therein to the total direct labor affected by such top cost when the top cost consists principally of expense of supervision.

B. Prorate the top cost to each operation upon basis of the direct labor and materials therein to the total direct labor and material when the top cost consists of expense of supervision and of procuring, storing, and issuing material.

C. Prorate the top cost to each operation upon any other basis, as machine hours employed in the given operation to total machine hours, when the machine rather than the individual is the measure of such expense.

51. Before considering the general division into analytical bookkeeping and factory cost keeping it will be well to take up certain of the primary steps which are essential in order to secure correct results. These steps, which are common to both systems, relate to the methods for recording elemental costs.

52. Practically every producing concern or organization has its storehouses—that is, buildings or rooms to which property is sent when purchased or when secured in any other way, where it is kept until called for, and whence it is issued as needed for production purposes. The organization should therefore have stores accounts or per-

petual inventory records, with an account in both quantities and values for every article or class of articles carried in such store. Such record should be in the form of a ledger account, and usually a ledger card or loose-leaf ledger will be found best adapted to this purpose. This record should show the quantities and values of the receipts and issues.

53. The debit postings to this stores ledger will be made from the approved vouchers covering purchases, when such approved vouchers are always prepared immediately upon receipt of articles purchased, or from commercial invoices if approved vouchers are not prepared until some time thereafter, and from other approved vouchers, covering these other elements of expense principally for services of various kinds heretofore referred to (par. 38) as forming a part of the cost of stores. When these debit postings are made from the receipted invoices there should be a suspense account credited therewith to be debited with the same amount when the voucher is approved and paid. In practice it will probably develop that the purchase price and transportation by freight or express are the only items which can be charged directly on the accounts for the various items of stores and that a sufficient percentage to cover the other expenses must be added to the foregoing to get a total cost charge for each article of stores. When the articles of stores are of greatly differing nature and the expenses vary greatly, it may be necessary to classify all the articles of stores and fix different percentages for this loading of the several classes.

54. The credit postings to this stores ledger will be made from requisitions, sometimes called material bills or cards, drawn by or by direction of those in charge of the various operations. Such requisitions should usually be in duplicate, and should show the quantity, unit price, and gross cost for the stores supplied upon it. They should also show for what purpose the articles are wanted, as

hereafter set out in discussing the two systems of cost accounting.

55. When articles of property, either in the form of raw material or as partly finished stock, are transferred from one branch of the organization to another or returned to the storehouse, the record of such transaction should be made upon a requisition. For convenience, the record of such transfer is often given some other designation, as "material invoice," "property transfer," etc., but by whatever term it is known it is a requisition in the broad sense, i. e., the order which secures and records the movement of stores within an organization.

56. The balance shown on the stores ledger will presumably represent the quantities on hand in the stores, and, if it does, it will verify the amounts of the issues as credited thereon and correspondingly debited to the work for which they were supplied. The labor and trouble involved in making an actual physical inventory, however, should not be permitted to excuse the omission of such stock taking. The verification of receipts for which payment is to be made must of course be made in order to certify the proper vouchers; but receipts for which no payment is to be made, as of articles transferred from one arsenal to another, or to or from a warship and a navy-yard, should be checked as carefully for both quantities and values.

57. The verification of the stores on hand may be accomplished in any one of several ways:

A. At times when because of legislation or regulation a change takes place in the status of stores.
B. At times when it is known that the supply of certain articles is low.
C. At arbitrary dates, either for the entire stock once or twice a year, or preferably on successive dates for different classes of articles.

58. Individual labor, whether of men or animals, should be recorded by some kind of time book, either solidly bound or loose-leaf, or some kind of work-report slips, showing the name and number of the employe, his designation, time

employed or quantity of work performed, unit for payment and rate, total earnings and references to the particular work upon which employed. From such time records pay-rolls or service vouchers will be prepared and the time records should be of such a character as to admit of the entire amount of the pay-roll therefor being charged direct to the product on which the work was done.

59. When the work on the products extends over long periods of time, the cost of the lost time should be determined in whole or in part at the end of the fiscal or calendar year, or on other fixed dates, and the charges made for actual time lost and generally prorated on the basis of the cost of the productive and non-productive labor. If, however, it is necessary for any reason to obtain the cost of any part prior to the regular time for distribution of the cost of lost time, the estimate for it may be made as hereafter indicated for job work. When the product is in the nature of job work for which charges must be made on completion of the work or shortly after, a percentage should be added to the cost of the productive and non-productive labor chargeable to the work as an estimated equitable charge for lost time.

60. Bulk services, furnished by the job, etc., will usually be reported in the form of a commercial invoice to be thereafter vouchered and from which the proper entries may be made charging the accounts for which the service was rendered.

61. Reports of the quantities and varieties of the completed output are as essential as records of the stores and services which have become a charge to it, and must be returned with the same regularity and carefulness. In continuous process factories, when operated under normal and uniform conditions, the quantities of the marketable product may be sufficient, upon the assumption that the quantity of partly finished stock at the end of the period was the same as the quantity at the beginning of said pe-

riod. If the conditions of operations are changing greatly, or if the product is the output of varied process factories, the reports must show the entire accomplishment both in completed and partly completed stock.

62. Having discussed the methods applicable to making a sufficient record of the elemental costs and the quantity of product, it now remains to describe the two systems for combining the records of such elemental costs.

63. The productive work of practically every producing concern is done through a series of operations. It is a difficult task to group these into general classes. Possibly a fairly comprehensive and representative grouping would be as follows: Stores, incidental operations, productive operations, marketing operations, administration. An example from the government service is found in the Bureau of Engraving and Printing. Limited to its production of postage stamps its operations when grouped according to the foregoing classification are about as follows:

Stores—Materials, supplies, and plant.
Incidental operations—Engraving, power, care of building.
Productive operations—Wetting, printing, gumming, perforating, cutting, inspecting.
Marketing operations—Packing, carting.
Administration—Superintendence, ordering, accounting, watch and messenger service.

64. A class of organizations to which analytical bookkeeping is especially adapted as a system for determining the costs of various portions of the work is that of the scientific or investigating bureaus. The work of such organizations will often occasion as necessary component parts thereof the following practically independent operations:

Stores—Necessary supplies.
Incidental operations—Mailing requests for information.
Productive operations—Field investigations, office investigations, laboratory work, computing, editing.
Marketing operations—Printing, packing, shipping.
Administration—Superintendence, clerical, messenger.

65. It has already been stated (par. 20) that when the

product is measurable in bulk and not usually divided into separate units, a system of analytical bookkeeping is sufficient if an analysis of the expenses has been made according to the purpose of the expenditures. Such analysis should be according to the immediate object or purpose to be accomplished rather than according to the nature of the particular expenditure. The latter classification is also valuable in determining the elements of cost, but the former classification, showing for what operation the expenditure was incurred is the more important. Ledger headings, or controlling accounts, should be provided for each of the general operations and subdivided as far as experience shows is profitable. For these accounts, short, appropriate titles may be selected, or a system of symbols, using letters or figures, or both, may be adopted. The former is probably surer in accuracy of the record work; the latter is the simpler in the amount of such work, and if handled carefully can be profitably employed.

66. The distinguishing feature of factory cost keeping is that the individual costs of the various items of product are not obtained from the general ledger, but are collated in some sort of cost ledger, the total charges to which should equal the totals of the charges to the several departmental, operating, or controlling accounts in the general ledger. An analysis of the operations of the business and a separation into classes is necessary, as indicated for analytical bookkeeping, and the expenses for each should be charged to its appropriate account. But when the product is varied in nature and requires at times only one operation, at times two, and again all, or nearly all, it becomes impracticable to secure accurate costs by any system of prorating. It then becomes necessary to open an account in the cost ledger to which shall be charged all expenses incurred for that particular item of product.

67. The basis for the factory cost-keeping system is the production order, otherwise styled a job order, shop

order, work slip, fabrication order, etc. It serves several purposes, as follows:

A. It alone is the means employed to initiate work upon a particular unit or group of units of output.
B. It authorizes the heads of departments of the organization to secure necessary quantities of stores, which are charged thereto, and makes proper record of disposition of the services of employes.
C. It bears a number by which all raw material and partly manufactured stock therefor is known.
D. It, or some accompanying work report or subproduction order, collects the quantities of services applied to the production of the output.
E. It becomes a part of the loose-leaf cost ledger or is the journal from which postings are made to the cost ledger if kept in any other way.

68. This is actually the title of an account in the general ledger covering certain general classes of expense, usually more or less uniform, within different periods of like duration. Such expenses are usually those for the incidental operations necessary to the progress of the directly productive operations. The accounts necessary will often be those for enlargement or betterment of plant, increase of equipment, renewals of plant or equipment, power, heating, lighting, care of building, etc.

69. Costs to a contractor on private and corporate work are now frequently determined in the interests of the party for whom the work is performed. Construction work under the Government is generally done by contract. In such case it is desirable, as a rule, to determine two costs for the work—first, to the Government, and second, to the contractor. The reasons for the determination of such costs are to furnish information in regard to (A) the profits or losses of the contractor; (B) the probable ability of the contractor to complete his contract; and (C) unit costs which are of value in determining estimates of cost and reasonableness of bids for future similar work.

70. The methods employed in collecting contractors' costs are those which pertain to ordinary construction work with such variations as may be necessary in each

case. Statistics of productive labor, materials, and supplies are collected by inspectors. Unit prices pertaining thereto may be assumed at market rates, or, if the contract requires it, as is frequently the case, the contractor may be requested to furnish these and other data which cannot be readily collected by inspectors. It may be necessary and desirable to estimate many of the details of such costs. For example, in the case of horses owned by the contractor it is frequently more satisfactory to reckon the cost of their work on the basis of current rates for hiring animals rather than to determine the cost of maintaining them and to estimate depreciation, etc.

71. Since the details of the collection and estimating of contractors' costs vary with conditions, they should be fully described in each case. The costs as reported should also be divided into two parts, (A) those which are determined accurately and (B) those which are estimated. The accompanying explanations should be so complete that other persons using the data may be able to judge their value and the limits of their accuracy.

72. Periodical Literature.—In the July, 1904, issue of the Engineering Magazine (vol. xxvii, p. 643) there was printed "An Index of the Literature of Industrial Engineering," containing references to over eighty articles on cost keeping; and also lists of articles on "Depreciation," "Wage systems," and "General management." Many articles of value have appeared since that date in various trade and accounting journals, among which special attention should be called to three papers on "Cost keeping on contract work," by A. W. Buel, in the March, May, and June, 1905, issues of the Engineering Magazine (vols. xxviii and xxix). It is to be hoped that such indexes of the periodical literature on the subject may be published regularly.

73. Permanent Literature.—There follows a list of books relating to cost keeping and kindred matters, which

is believed to be a fairly complete bibliography of the subject:

74. Cost Keeping and Business Organization—

On the Economy of Machinery and Manufactures. Charles Babbage, A. M. Charles Knight, London. 1832.
Cost of Manufactures and the Administration of Workshops. Capt. Henry Metcalf, Ordnance Dept., U. S. A. John Wiley & Sons, New York. 1885.
Factory Accounts. Emile Garcke and J. M. Fells. Crosby Lockwood & Sons, London. 1887.
Cost Accounts. Walter Strachan, Inc. Acct. Stevens & Haynes, London. 1893.
Commercial Organization of Factories. J. Slater Lewis. E. & F. N. Spon, London. 1896.
Commercial Management of Engineering Works. Francis G. Burton. Scientific Publishing Co., Manchester. 1898.
Management of Engineering Workshops. Arthur H. Barker. Technical Publishing Company, Manchester. 1899.
Engineering Estimates and Cost Accounts. Francis G. Burton. Technical Publishing Co., Manchester. 1900.
Complete Cost Keeper. Horace Lucian Arnold. Engineering Magazine Co. 1900.
Cost Accounts of an Engineer and Iron Founder. J. W. Best, F. C. A. Gee & Co., London. 1900.
Cost Accounts. C. A. Millener. Hunter-Rose Co., Toronto. 1901.
Cost of Production. Charles J. Watts. Shaw-Walker Co., Muskegon. 1902.
Engineers and Shipbuilders' Accounts. Francis G. Burton. Gee & Co., London. 1902.
Contract Accounts. Everett Audit Co. Published for McArthur Bros. Co., Chicago. 1902.
Factory Manager and Accountant. Horace Lucian Arnold. Engineering Magazine Co., New York. 1903.
Manufacturers' Accounts. W. C. Eddis, F. C. A., and William B. Tindall, A. C. A. Published by the Authors, Toronto. 1904.
Manufacturing Cost. H. L. C. Hall. Bookkeeper Publishing Co., Detroit. 1904.
Workshop Costs for Engineers and Manufacturers. Sinclair Pearn and Frank Pearn. 1904.
Builders' Accounts. John Arthur Walbank. Gee & Co., London. 1904.
Cost Accounts. L. Whittem-Hawkins. Accountancy Publishing Co., New York. 1905.
Business Features of Engineering Practice. A. C. Humphreys, M. E. Stevens Institute of Technology, Hoboken. 1905.
Cost of Production. Bert Clifford Bean. System Co., Chicago. 1905.
Organizing a Factory. Clinton E. Woods. System Co., Chicago. 1905.

75. Depreciation—

Depreciation of Factories and Their Valuation. Ewing Matheson. E. & F. N. Spon, London. 1884.
Depreciation Reserves and Reserve Funds. Lawrence R. Dicksee. Gee & Co., London. 1903.

76. Wage Systems—

Profit-Sharing Between Capital and Labor. Sedley Taylor, M. A. Kegan Paul, Trench & Co., London. 1884.

Profit-Sharing Between Employer and Employe. Nicholas Paine Gilman. Houghton, Mifflin & Co., New York and Boston. 1889.

Bargain Theory of Wages. Professor Davidson. Rutgers College, New Brunswick. 1898.

SOME PRINCIPLES OF COST ACCOUNTING.*

BY ERNEST RECKITT, C. P. A.

In the choice of a subject, I have been influenced not only by the growing demand on the part of manufacturers for intelligent men in their cost departments, but also by the necessity of a greater appreciation of correct principles in the application of "costs." Many business men have unfortunately lost faith in the benefits to be derived from maintaining a cost department, and it has been my experience that usually in such cases the failure of the system has been due to illogical methods and a failure to bring the information which should be prepared by this department in concise form before the superintendent and general manager. Thus, it is no uncommon thing to find the total factory expense apportioned on the basis of the prime cost of the complete machines, instead of determining the factory expense of each department and apportioning same on the parts manufactured by that department. Where the factory output consists of a variety of machines and where the factory expense of some departments is much heavier than in others, it will be readily seen that the latter plan is the only one which could give accurate results.

Before entering upon the discussion of what constitutes factory or manufacturing cost, it is advisable that you should have a clear understanding of certain of its features, and the first that I will call your attention to is that of Rental.

The actual ownership of a plant, that is, the real estate, buildings, boilers and engines, is not essential in order to manufacture. Not only can plants be rented, but the power, light and heat can be purchased from outside sources.

* Reproduced from Journal of Accountancy.

Therefore, if a manufacturer decides to invest the whole or part of his surplus capital in real estate, plant, etc., and erect his own power, light and heat plant, he is actually engaging in other enterprises not absolutely essential to the manufacture of the articles he sells. As an illustration, we may suppose a concern, that for the sake of convenience we will call the Smith Mfg. Co., having a capital of $150,-000.00, whose net profits amount to $30,000.00, and who pay an annual rental of $9,000.00 to a Mr. Brown on property valued at $100,000.00. It is fair to assume that Mr. Brown pays out in taxes, insurance and repairs the sum of, we will say, $2,000.00 a year and makes a reserve for depreciation at the rate of 2 per cent per annum or $2,000.-00, leaving a net available profit to himself of $5,000.00, or 5 per cent on his investment of $100,000.00.

The question arises whether it would be a good investment for the Smith Mfg. Co. to own its own real estate and plant, or whether it would be wiser to continue to rent. If they purchase the premises for $100,000.00 out of their earnings, they will then have an invested capital of $250,000.00, producing profits amounting to $35,000.00 per annum or 14 per cent on their invested capital, while prior to that time their profits amounted to 20 per cent on a capital of $150,000.00. Hence it will be seen that it would be folly to sink $100,000.00 in the purchase of a plant, unless their profits produced more money than they could advantageously use in increasing their business, or unless it was considered that the purchase of the plant was a good conservative investment. But the $100,000.00 so invested could have been used to purchase bonds or other safe securities and their regular and legitimate business would have gone on just the same. It is, therefore clear, that if a company, private firm or individual owns its own plant, it should consider it as a matter quite outside of the investment in the manufacturing business, and should charge the latter with rent, so that the true percentage

of profit on the articles manufactured can be arrived at. Furthermore, in nearly all factories it is found necessary to establish departments, one department manufacturing one part of the mechanism or articles dealt in, while another department carries out other operations. Each department should be charged with its proper proportion of rent, and this same plan is sometimes carried still further by charging each machine with its proportion of rental charges. Thus the cost of operating a large steam hammer in respect to space occupied would be very much larger than that of a small drill used in conjunction with special tools.

To determine the rental chargeable by a concern owning its own real estate and plant, it is necessary to open in the general ledger an account to be termed Real Estate Operating Account, and to charge this account with the following items:

(1) Real Estate Taxes,
(2) Fire Insurance on Buildings,
(3) Repairs to Buildings,
(4) Depreciation on Buildings,
(5) Interest at 5 per cent or 6 per cent per annum on the amount invested in Real Estate and Buildings,

—and to credit this account and charge the various departments each with its proportionate amount which in the aggregate will equal the total debits. To make this clearer I have drawn up the following statement as illustrating a Real Estate Operating Account:

DEBITS		CREDITS	
		Distribution to Departments:	
Real estate taxes	$ 500.00	Chargeable to Dept. A	$3,000.00
Fire insurance	1,000.00	Chargeable to Dept. B	1,500.00
Repairs	500.00	Chargeable to Dept. C	3,500.00
Depreciation	2,000.00	Chargeable to power plant	500.00
Interest at 5% on investment	5,000.00	Chargeable to administration expense for office bldg.	500.00
	$9,000.00		$9,000.00

The charge appearing in the above account representing

interest at 5 per cent on the investment in real estate and buildings should be credited to a real estate profit and loss account.

The next item of factory cost that requires comment is depreciation. It is not my object to treat fully of depreciation, as to do so would demand a lengthy paper on this subject alone, but merely to point out its importance. Depreciation may be said to be the gradual diminution in value, due to wear and tear, obsolescence, or other causes, of what are termed fixed assets, such as leases, patents, buildings, machinery, etc. I believe it was John Mann, C. A., of Glasgow, who said that the application of the principles involved by the term depreciation is merely an acknowledgement of that universal law that nothing around us is eternal, and that sooner or later everything must succumb to the destructive forces of the elements or to change of conditions.

Closely allied to depreciation is the item of extraordinary repairs. We will suppose that a factory has been built and new boilers, engines and machinery installed. It is reasonable to expect that during the first year the repairs will be exceedingly light; during the second year, somewhat heavier; during the third year, still greater; until it may be the fourth year and after, before the repairs to the machinery appear to cost approximately the same each year. Yet it is only fair that the first and second years' business should be chargeable with a part of the repairs made during succeeding years, as it is the wear and tear of these years that has largely been instrumental in causing the outlay in the third and fourth years. For this reason it is proper and conservative to charge the first and second years with an estimated amount to cover repairs to be made in the future and to credit a reserve account which in later years may be used to lessen the charge to profit and loss for this form of outlay.

While it is perhaps scarcely within the scope of this

article, I would state that no factory accounts are complete without a system, preferably a card system, for recording all the machinery in stock. There should be a card for each machine, filed in the case in such a manner that its location in the factory can be immediately determined. If the machine be moved from one room to another the card is similarly changed to another sub-division in the case. Each machine should be numbered, the corresponding number being entered on the card, in addition to which the card should show:

(1) Description of machine.
(2) Date of Purchase.
(3) From Whom.
(4) Original Cost.
(5) Freight Paid and Cost of Installment.
(6) Amount of Depreciation Written Off Each Year.
(7) Date Scrapped.

On the other side, the card should record cost of all repairs made, so that a complete history of each machine can be obtained by the factory superintendent. When the repairs to the machine pass beyond a certain point, this fact can be ascertained, and a decision reached as to whether or not it would be cheaper to send the machine to the scrap heap.

Having dealt with some features of factory costs which require more careful study than such items as cost of material and labor, we may safely pass on to the subject of what constitutes factory cost and of other definitions of terms used in this connection.

The terminology of this subject is in a very chaotic condition, this being due largely to the fact that the science of factory costs is hardly out of its swaddling clothes. Though many systems of factory costs have been brought up to a high state of perfection, they are isolated, and though many valuable articles as well as books have been written, each person has pursued this investigation along

his own special lines and there does not appear to have ever been any convention of those interested in this subject, so that a nomenclature and definition of terms which would be accepted by all could be settled for all time. Thus, that part of the cost of manufacture other than cost of material and direct labor is known by a multitude of terms, such as, Factory Expense, Factory Burden, Overhead Charges, General Expense, Establishment Charges and "On Cost." To the student this is at first confusing, until he realizes that they all mean one and the same thing. Even the term "cost" is frequently used in a very off-hand manner, some people understanding by this term the cost of manufacture and not total cost, including the cost of selling and administration expenses, while others again might understand it to be the cost to the purchaser, which is equivalent to the selling price.

Webster's Dictionary says that the word "cost" means "The amount paid for anything; a charge; an expense"; but it will be advisable that a clearer understanding of what cost represents should be had before going any further. It is important that we should know what are the factors that enter into the cost of any manufactured article. In the following diagram I have attempted to show these factors.

- Cost
  - Factory Cost
    - Prime Cost
      - Material
      - Direct Labor
    - Factory Expense
      - Direct Factory Expense
      - Indirect Factory Expense
  - Selling Cost
    - Distribution
    - Administration

As I do not propose in this article to enter into any discussion of the cost of selling, you will note that the sub-

ject to be dealt with is factory costs, or, as it is often termed, cost of manufacture. This division of the subject is a rational one, for there is a distinct line of demarcation between the cost up to the point of placing the finished product in the stockroom ready for shipment, and which involves all items entering into cost of manufacture; and the cost of selling, which includes salaries and commissions to salesmen, traveling expenses of salesmen, cost of packing and shipping goods from stockroom or warehouse, cost of administration in salaries to officers and clerical staff in recording sales and in collection of accounts and other office expenses incidental thereto.

You cannot separate, however, prime cost from factory expense, for in a factory there cannot be such a thing as prime cost without factory expense, and the line of demarcation between the two is difficult to distinguish, and can only be carried out after a thorough knowledge of the fundamental principles underlying each.

Generally speaking, we may define prime cost as that portion of the cost of any part or whole of a mechanism or material manufactured, that can be absolutely known as chargeable to same without having to resort to estimates based upon percentages or any other more or less arbitrary method. Thus, in the simplest system of factory cost, the cost of two ingredients of prime cost is always ascertainable, namely, cost of material and direct labor. Direct labor is the term used to designate the labor actually spent carrying out some operation on the part manufactured, while the term indirect labor represents the labor which it is impossible to charge up against any one part, such as wages paid to foremen, inspectors, roustabouts, etc.

It follows that the most accurate costs are obtainable when most of the cost of manufacture can be classified under the heading of prime cost. But higher civilization and the wonderful development of machinery as a substi-

tute for human labor is making the proportion of cost of manufacture chargeable to prime cost become smaller and smaller with a corresponding increase in factory expense. As an illustration of this fact, when Robinson Crusoe hewed down the tree from which he made his canoe, the cost of such a boat was all direct labor, and not even cost of material could enter into the calculation. Under a somewhat higher state of civilization the order for a boat merely necessitated the shipwright's purchasing some sound oak lumber from a neighboring farmer and with his own hands building the boat. In this last case you have cost of material and direct labor. The introduction of machinery has changed those conditions, and what was once carried out by human hands is now largely accomplished by machinery, so that the prime cost of an article is apparently much less when machinery plays a part than when it is only partially used or not at all.

It is, therefore, clear that machinery is but another form of labor, and that the cost of machine labor, or what may be termed "machine cost," is a part of prime cost, if it can be accurately determined. I have gone somewhat fully into this phase of the question to show how fine a dividing line exists between prime cost and factory expense; that one cannot exist without the other, and that the division between the two is in reality arbitrary.

In a factory where there is more than one department, it is customary to charge each department with its particular expenses in so far as these can be arrived at, and in this manner to calculate more accurately the cost of each particular part. When factory expense can be thus accurately distributed between departments, it is termed direct factory expense, and those expenses which it is impossible to distribute as between departments are known as indirect factory expense. Here again we find it difficult to make any exact dividing line as between direct and indirect factory expense; for what in one plant may be

classified as direct, becomes indirect factory expense at another plant. For instance, one plant may possess meters or other instruments for measuring the electricity or other motive power used in each department, while another plant may contain no such gauges, and in this latter case the cost of power would have to be classified as indirect factory expense.

From the above remarks I now call your attention to the following table showing the various items of costs entering into the total cost of manufacture, arranging them as far as possible under their usual classifications; but it must be borne in mind that in so far as the distributions under direct and indirect factory expense are concerned, they are by no means final:

Prime Cost:
- Material.
- Freight In.
- Handling Charges.
- Direct Labor.
- Royalties.

Direct Factory Expense:
- Rent.
- Abandoned Tools.
- Defective Parts.
- Supplies.
- Part Indirect or Unproductive Labor.
- Repairs and Replacements.
- Depreciation.
- Insurance.
- Taxes.
- Power, Light, Heat } If amount to each department can be ascertained.

Indirect Factory Expense:
- Salary of Superintendent and part Indirect Labor.
- Shrinkage in Inventories.
- Casualty Insurance.
- Salaries and Supplies, Cost Dept.
- Salaries and Supplies, Purchasing Dept.
- Salaries and Supplies, Stock Dept.
- Salaries and Supplies, Drafting Dept.
- Power, Light, Heat } If no separation between departments is possible.

In arriving at the cost of power, light and heat, where all of such items are manufactured by the concern operat-

ing the plant, it is, as stated heretofore, customary to consider the power plant as a separate institution or department, the various items of cost entering into same being shown in the following table:

Power Plant:

Fuel.
Supplies.
Labor.
Rent.
Repairs and Replacements.
Depreciation.
Taxes and Insurance.

Upon ascertaining the cost of the power plant, such cost must be prorated over the other departments in proportion to the amount of power, heat and light supplied.

Having discussed the various items of cost and their nature, the next step is a consideration of how to apply a knowledge of the amount in the aggregate of such costs to a determination of the cost of each and every part manufactured.

Taking up first prime cost, it does not require any large amount of experience to see that the cost of the material is based upon an actual measurement of the material used and that the direct labor can also be readily computed from the daily reports of employes. Where wages are paid by piece work, it will be seen that this can easily be ascertained by adding together the cost of each operation; and where employes are paid upon a per diem basis, the average cost per operation is obtained from the daily reports which show the number of good parts operated and manufactured during the course of several days.

Factory expenses, whether direct or indirect, cannot be calculated in this exact manner and various methods are in use for prorating these expenses, each of which has its advantages in special cases. These methods are:

1. A rate varying with quantity of material handled, or what may be called the "Unit System."
2. Percentage on prime cost.

3. Percentage on amount of direct labor in money values.
4. Percentage on time spent by direct labor.
5. The method known as machine cost.

Quoting from the article on this subject by John Mann, Jr., Chartered Accountant, of Glasgow, appearing in the Encyclopedia of Accounting:

> All these methods should bring out the same total result, that is, taking the work in mass, but they vary much in accuracy when applied to departments or pieces of work. Extraordinary differences emerge under the various methods, and as costing becomes more minute and exact the selection of the best method of distributing expense is of great importance. The opinions expressed as to the merits of these systems are conflicting. The fact is that each is to some extent a compromise, so that in making a selection the peculiarities and special circumstances of each industry must be remembered. It may be best to adopt different principles in different classes of expenses by different methods.

To those of you who desire to make a special study of this subject I would advise a careful perusal of the balance of this article in the Encyclopedia of Accounting. I will content myself with a few comments upon each method.

1. The Unit System.—This method is used to advantage in any plant or business where the product is uniform, such as breweries, coal mines, flour mills, when the commodity is sold on a unit basis. Thus the factory expense is divided by the output so as to arrive at the factory expense per barrel or per ton. It will, however, be seen that in case of a factory turning out several grades of the same article, such as a flour mill, even the above method of distributing could not be used without taking into consideration some other factor, which would charge a greater proportion of the factory expense to a higher grade than to the lower grade.

2. Percentage on Prime Cost.—This method is not to be recommended except in small concerns where an elaborate cost system is not practicable. It is what might be termed a rough and ready method, and is one which is commonly used in small establishments, as, for instance,

a tailor's shop, where it is customary in figuring the expense of making a suit of clothes to add to the cost of the cloth used the amount of labor necessary for making same, to the total of which is added a percentage of the prime cost to cover other expenses of the business. In this way it will be seen that a man ordering a more expensive cloth will be really paying more than his share of the running expenses of the business compared with the man who orders cloth of a cheaper texture. This method of distributing factory expense is, however, very commonly used by larger concerns and erroneously so, as it leads to many inaccuracies in obtaining accurate costs.

As another illustration we may take a concern dealing in silverware and allied goods. In the particular case in point, not only does the concern manufacture solid silver spoons but also silver-plated ware. The cost of the material in one case is very much higher than in the other, and to prorate the factory expenses on the basis of prime cost will result in two evils; first, the cost of the solid silverware reported by the cost department will be considerably higher than it actually is; second, the reported cost of the silver-plated ware will be considerably less than it actually is. If the selling prices were based upon such inaccurate costs, it would be found that the selling prices of solid silverware were higher than those of their competitors, with the result that they would lose orders; while in the case of the silver-plated goods, their prices would be lower than those of their competitors, with the probable result that they would be inundated with orders, but these orders would bring in little or no profit to the concern.

3. Percentage on Direct Labor.—In many concerns this method is popular and good, but it is not applicable in a concern which manufactures both large and small goods, involving in one case the use of heavy machinery and in the other a number of small machines. Otherwise, it may

be used to considerable advantage, as the cost of direct labor in any part or mechanism can always be known, and the proportion that exists between the total factory expense and the total direct or productive labor is readily ascertainable. It is not, however, an advisable method, unless conditions of labor remain fairly normal, and in cases where automatic machinery is largely used this method could not be adopted, inasmuch as such machinery is taking the place of labor.

4. Percentage of Time Spent by Direct Law.—Of all the methods of distributing factory expense this is probably the most scientific. The element of time enters very largely into most of the fixed expenses of a business; therefore, it would appear that factory expenses should be distributed on the basis of the length of time that it requires any part of a product or the product itself to be manufactured. Under this plan it will be seen that an employe who loafs at his work is increasing in the same proportion the amount of factory expense chargeable to the cost of the product. This method, therefore, brings out very clearly the great importance of speed in attaining results. A case to illustrate this point would be that of a large office building which is to be constructed. A few years ago it was not an uncommon thing to find that it took two years to erect such a building; now it is the exception. We see a whole building torn down, foundations laid, the steel construction erected and enclosed with masonry and brick, and the whole of the inside of the building completed within twelve months. The cause of this great activity is to be found in the fact that the interest on the money lying idle in the first case is twice as large as in the second case, and a further saving by securing the erection of the building in one year is effected by the fact that one year after starting its erection the building is occupied and earning money. The value of the interest thus saved is such an important factor that it pays to expend

large sums of money for overtime to mechanics and to incur other special expenses incident to obtaining speed. The same principle holds equally good in factories where the same amount of interest on investment and many of the factory expenses go on the same, whether the factory be running full blast or closed down.

5. Machine Costs.—In this article I have frequently alluded to the fact that machinery has to a very large extent taken the place of what prior to the introduction of machinery would have been direct labor. I have also stated that the most accurate costs can be obtained where the predominance of the cost was in the cost of material and direct labor, leaving only a small amount of factory expense to be distributed. It follows, as machinery is only another form of labor, that if we could by any process of figuring compute the cost of the machines in the same manner as we can direct labor, we should then arrive at a more accurate method of determining costs. This is just what the method known as "machine costs" attempts to accomplish; but, of course, it is only with respect to machinery that carries out a distinct operation on a part manufactured that this method can be used. Thus, traveling cranes, shafting, pulleys, etc., cannot come under this classification. The factors that enter into machine costs may vary in different establishments, but in any case they will include the following:

1. Interest on Investment.
2. Depreciation.
3. Repairs.

To these factors others may be added, and should be added if they are obtainable, such as, rent of floor space and amount of power supplied. On arriving at the cost per annum of each of the above factors in respect to a machine, the normal number of hours that the machine will work during the course of a year is estimated and the total number of hours during the year is then divided into the total

cost per annum, and in this way we arrive at what may be termed machine cost per hour. By adding to this the cost per hour of direct labor for the man employed to operate such machine or machines we obtain what is termed the "machine rate." It will thus be seen that in calculating the cost of any operation a great deal of guesswork in respect to certain elements of factory cost are thereby eliminated and a more accurate knowledge is obtained of the cost of each operation.

SECTION F

PEOPLE EX REL. MANHATTAN RAILWAY CO. V. BARKER.

[Court of Appeals of New York. June, 1895. 146 New York, 304.]

Cross-appeals from order of the General Term of the Supreme Court in the first judicial department, made April 11, 1895, which reversed an order of Special Term vacating and setting aside an assessment of the relator's capital stock for taxation as personal property for the year 1894, and affirmed the proceedings of the commissioners of taxes and assessments.

The facts, so far as material, are stated in the opinion.

HAIGHT, J. On the 8th day of January, 1894, the commissioners of taxes and assessments of the city of New York assessed the relator, the Manhattan Railway Company, for its personal property at the sum of $30,000,000. In the month of April thereafter the relator filed a statement upon one of the blank forms furnished by the department of taxes and assessments showing its condition on the second Monday of January, 1894. An examination of the treasury of the company was thereupon had by the commissioners, who then reduced the assessment and fixed it at the sum of $17,860,712. The relator thereupon procured a writ of certiorari directed to the tax commissioners, commanding them to make return of the proceedings had before them to the Special Term of the Supreme Court in order that a review might be had before that court. Upon the returns so made by the commissioners a hearing was had by the court in November, 1894, upon which an order was entered vacating the assessment. Upon an appeal to the General Term this order was reversed and the assessment as made reinstated.

In 1893 some controversy arose over the amount of the assessment of the relator's personal property, which resulted in Mr. Davies, the attorney for the relator, addressing a letter to the commissioners, in which he states that Mr. Gould had authorized him to say that if the assessment did not exceed $12,500,000 they would acquiesce. The statement made in 1893 has some slight variations from that made in 1894, but is substantially the same with the exception that the amount of surplus reported in 1894 is nearly $1,000,000 in excess of that of 1893, so that if the commissioners in fixing the amount of the assessment for 1894 acted upon the statement made in 1893 as compared with that made in 1894, and the letter addressed to them by Mr. Davies, they could not well have increased the assessment in 1894 more than $1,000,000 or thereabouts, the amount of the increase of the surplus earnings of the company. This would have made in round numbers $13,500,000. It was, however, stated upon the argument by their counsel that a very different method was adopted in reaching the amount of the assessment; that in the statement furnished to the commissioners the assessed value of the real estate had been given at $7,323,200, and no mention had been made as to its actual value, and that the commissioners were, therefore, left to judge for themselves as to the actual value, and that that was arrived at in the following manner:

Capital Stock		$29,925,200
Bonded indebtedness		21,163,035
Surplus		5,326,432
Gross assets		$56,414,667
DEDUCTIONS.		
Assessed value of real estate	$ 7,323,200	
Stock in other companies	7,075,200	
Mortgaged indebtedness	21,163,035	
10 per cent of the capital stock	2,992,520	
Total	$38,553,955	$38,553,955

Which deducted from gross assets, leaves amount assessable		$17,860,712
The actual value of the real estate as assessed is thus ascertained from the relator's statement by deducting from the gross assets		56,414,667
The amount of its personal property, consisting of rolling stock, cash, tools, etc..............................	$3,748,315	
Stock in other companies	7,075,200	
		$10,823,315
Leaving as the actual value of the real estate		$45,591,352

We cannot adopt or approve of this method of ascertaining the value of the relator's personal property or of the actual value of its real estate. The method is erroneous and incorrect for various reasons. Under the statute the capital stock of every company liable to taxation, except such part of it as shall have been excepted in the assessment roll or shall have been exempted by law, together with its surplus profits or reserve funds exceeding 10 per cent of its capital after deducting the assessed value of its real estate and of shares of stock in other corporations actually owned by such company which are taxable upon their capital stock under the laws of this state, shall be assessed at its actual value and taxed in the same manner as other personal and real estate of the country (Laws of 1857, chap. 456, sec. 3). It is the actual value of its capital stock and not the market value of its share stock that is to be assessed; in other words, it is its actual tangible personal property and not its franchises. Other statutes provide for the taxing of its real estate and franchises. (People ex rel. The Union Trust Co. v. Coleman, 126 N. Y. 433.) The real property of the relator is located in the city of New York under the eye and subject to the inspection of the commissioners. Under the Revised Statutes they are required to assess it at its just and full value as they would appraise the same in payment of a just debt due from a solvent debtor. (1 R. S. 393, 17.) And under the Consolidation Act for the city of New York it shall be assessed "at the sum for which such property under or-

dinary circumstances would sell." The value of property is determined by what it can be bought and sold for, and there can be no doubt but that these various expressions used in the statutes all are intended to mean the actual value of the property. The commissioners are sworn officers, and as such, in absence of evidence to the contrary, are presumed to have done their duty. They have assessed the real estate at $7,323,200, and yet, under the method presented by their counsel for ascertaining the value of the relator's personal property, they now estimate the actual value of the real estate to be $45,591,352. We are aware that it is generally understood that in many localities throughout the state assessors, in violation of their duties, assess the real estate in their localities at a sum less than its actual value, but in the absence of evidence that this has been done by the commissioners of taxes and assessments in the city of New York, we cannot assume that they have so transgressed for the purpose of approving of their work in this case. Real property cannot well be covered up or hid from view. Its value can readily be ascertained. It should be assessed upon estimates directly made as to its value and not upon presumptions figured upon intricate theories.

Again, the method presented by respondents' counsel involves the presumption that the indebtedness of the corporation represents property to the amount of such indebtedness in addition to that represented by its capital stock. This presumption cannot be indulged. The indebtedness may have been incurred for operating expenses, wages of employes and material used up. It may represent property worn out, decayed or burned up during the existence of the corporation. Presumptions that arise from the earnings of a corporation and those that arise from its indebtedness are quite different. Too many of the railroads of the country are in the hands of receivers to warrant a judicial presumption that the bonded or

other indebtedness of each road represents its actual tangible property in addition to that represented by its capital stock.

And again, the method proposed necessarily includes the value of the franchises possessed by the corporation which, as we have seen, cannot properly be included in the assessment under review.

Whilst the assessment made cannot be sustained, we think that the relator ought not to escape a proper assessment for the property. It is true that the commissioners are not free to capriciously disregard the evidence and emancipate themselves from all restrictions and rules, however fundamental; they are not bound by statements that are contradicted and which they disbelieve, where good reasons exist for such disbelief. (The People ex rel. Union Trust Co. v. Coleman, supra; The People ex rel. Edison El. Co. v. Barker, 139 N. Y. 55-67; The People ex rel. Manh. F. Ins. Co. v. The Comrs. of Taxes, 76 id. 64; The People ex rel. Gen. El. Co. v. Barker, 141 id. 251; People ex rel. Westchester F. Ins. Co. v. Davenport, 91 id. 574.) The letter of Mr. Davies in 1893 to the effect that if the assessment was made at $12,500,000 the company would acquiesce, having been written for the purpose of a settlement, and an adjustment of the controversy then existing, could not properly be adopted by the commissioners as the basis of an assessment for subsequent years. Still, at the same time, it might well create a suspicion as to the truthfulness of a statement made the year following showing that so far as the property of the corporation was concerned, aside from its franchises, it was insolvent to the extent of $3,000,000. Aside from this, there exists the fact that the net earnings of the corporation for the year were such as to enable it to pay the interest upon its indebtedness and a dividend upon its thirty millions of capital stock of 6 per cent and still have a surplus bordering upon a million dollars. These facts fully justified

the commissioners in discrediting the statement made to them by the relator. Personal property, unlike real property, may not always be readily found and assessments thereof by assessors are often attended with difficulties. For these reasons more latitude necessarily should be given assessors in ascertaining and determining the amount and value of personal property. Presumptions to some extent should be indulged. For this reason the earnings of a corporation may be considered by the assessors, and where they are such as to enable the company to pay its running expenses, necessary repairs, interest upon its indebtedness and declare a dividend of 6 per cent and still have a surplus, it may be assured that its capital stock remains unimpaired and that there are assets over and above sufficient to pay for its outstanding indebtedness. (People ex rel. The Equitable Gas Light Co. v. Barker, 144 N. Y. 94).

This method, however, may include the value of the franchises which should be deducted in order to determine the amount of property liable for assessment. Such value has not been given and we are consequently left without the evidence at hand upon which to determine the actual value of the personal property under the presumptions arising from the facts mentioned. It may turn out that the capital stock represents property to the amount thereof in addition to the franchises; that the stock issued to the stockholders of the New York, Metropolitan and Suburban companies represented money actually paid by the stockholders of those companies for real estate and the building construction and equipments of the elevated railroads thereon. Should such be the case, the presumption from the earnings of the company would be permissible, that the capital stock remained unimpaired, representing property over and above the franchises, to the amount thereof, and in addition, sufficient to pay the outstanding indebtedness. Upon this basis the assessable personal

property could be determined by adding to the capital stock issued the surplus still of hand not invested in the real and personal property of the company and deducting therefrom the assessable value of the real estate, the stock in other companies and the 10 per cent allowed by statute. The result would be as follows:

Capital stock		$29,925,200
Surplus on hand in cash		1,382,838
Total		$31,308,038
Real estate	$7,323,200	
Stock in other companies	7,075,200	
Ten per cent of capital	2,992,520	
		17,390,920
Amount assessable		$13,917,118

The General Term was of the opinion that this assessment could be sustained upon the authority of The People ex rel. The Equitable Gas Light Co. v. Barker (144 N. Y. 94). The difficulty is that in that case the value of the patents and franchise was found to be $500,000, whilst in this case we have no value given to the franchises or facts appearing from which such value can be determined.

The statute provides that upon the return of a writ of certiorari to review an assessment the court shall have power to order the assessment, if illegal, to be stricken from the roll, or, if erroneous or unequal, to order a re-assessment of the property, etc. (laws of 1880, chap. 269, 4). The assessment in this case is not illegal; it is merely erroneous. A re-assessment should, therefore, be ordered.

The order of the General Term should be reversed and that of the Special Term modified so as to vacate the assessment made and order a re-assessment by the commissioners, without costs of this appeal to either party.

All concur, except O'BRIEN, J. not voting.

Ordered accordingly.

CITY OF KNOXVILLE V. KNOXVILLE WATER CO.

U. S. REPORTS 212 2–19

[Mr. Justice Moody delivered the opinion of the court.]

This is an appeal by the city of Knoxville from a decree of the Circuit Court of the United States for the Eastern District of Tennessee. The appellee is a public service corporation, chartered for, and engaged in, the business of supplying that city and its inhabitants with water for domestic and other uses. The cause in which the decree was rendered is a suit in equity which was brought by the company on December 7, 1901, against the city to restrain the enforcement of a city ordinance fixing in detail the maximum rates to be charged by the company. This ordinance was enacted on March 30, 1901. The bill contained may allegations, which have become immaterial by the decision of this court in Knoxville Water Company v. Knoxville, 189 U. S. 434, in which the validity of the ordinance was sustained, except so far as it might confiscate the property of the company by fixing rates so low as to have that effect. The latter contention alone was left open to the company, and to it the remainder of the bill is mainly directed. The allegations in that regard are, that the rates fixed by the ordinance were so low that they denied to the company a reasonable return upon the property employed in the business, and thereby took it for public use without compensation, in violation of the Fourteenth Amendment to the Constitution of the United States. After answer by the respondent and replication by the complainant the cause was referred to a special master, whose report was confirmed by the court. The master found and reported that the value of the plant and

property employed in the business at the date of the passage of the ordinance was $608,427.95; that the gross income from the company's business was $88,481.39, and that the operating expenses were $34,750.91. The figures of income and expense are those of the fiscal year ending March 31, 1901, and the valuation was made as of that date. The master found and reported that the diminution of income which would have resulted from the enforcement of the ordinance during that fiscal year was $17,623.64, and that the gross income would have been reduced thereby to $70,857.75, leaving a net income of $36,106.84. This net income was less than 6 per cent on the valuation. In the opinion of the master 8 per cent, which included 2 per cent to provide for depreciation, was the minimum net return which the company was entitled to earn. The judge of the Circuit Court, in his opinion confirming the master's report, adopted the master's valuation of the whole plant and property at $608,427.95 (although he held that it ought to be increased by about $3,000.00), and the master's finding that the gross income was $88,481.39; that the expenses were $34,750.91; that the effect of the reduction made by the ordinance would be to lessen the gross income by $17,623.64, and that therefore the net income under the ordinance would be $36,106.84, or about $400.00, less than 6 per cent on the valuation. Upon these assumptions of fact as to its effect the judge regarded the ordinance as confiscatory and issued a permanent injunction against its enforcement.

At the threshold of the consideration of the case the attitude of this court to the facts found below should be defined. Here are findings of fact by a master, confirmed by the court. The company contends that under these circumstances the findings are conclusive in this court, unless they are without support in the evidence or were made under the influence of erroneous views of law. We need not stop to consider what the effect of such findings would

be in an ordinary suit in equity. The purpose of this suit is to arrest the operation of a law on the ground that it is void and of no effect. It happens that in this particular case it is not an act of the legislature that is attacked, but an ordinance of a municipality. Nevertheless the function of rate-making is purely legislative in its character, and this is true, whether it is exercised directly by the legislature itself or by some subordinate or administrative body, to whom the power of fixing rates in detail has been delegated. The completed act derives its authority from the legislature and must be regarded as an exercise of the legislative power. (Prentis v. Southern Railway Co., 211 U. S. 210; Honolulu Transit Co. v. Hawaii, 211 U. S. 282.) There can be at this day no doubt, on the one hand, that the courts on constitutional grounds may exercise the power of refusing to enforce legislation, nor, on the other hand, that that power ought to be exercised only in the clearest cases. The constitutional invalidity should be manifest, and where that invalidity rests upon disputed questions of fact the invalidating facts must be proved to the satisfaction of the court. In view of the character of the judicial power invoked in such cases it is not tolerable that its exercise should rest securely upon the findings of a master, even though they be confirmed by the trial court. The power is best safeguarded against abuse by preserving to this court complete freedom in dealing with the facts of each case. Nothing less than this is demanded by the respect due from the judicial to the legislative authority. It must not be understood that the findings of a master, confirmed by the trial court, are without weight, or that they will not, as a practical question sometimes be regarded as conclusive. All that is intended to be said is, that in cases of this character this court will not fetter its discretion or judgment by any artificial rules as to the weight of the master's findings, however useful and well-

settled these rules may be in ordinary litigation. We approach the discussion of the facts in this spirit.

The first fact essential to the conclusion of the court below is the valuation of the property devoted to the public uses, upon which the company is entitled to earn a return. That valuation ($608,000) must now be considered. It was made up by adding to the appraisement, in minute detail of all the tangible property, the sum of $10,000 for "organization, promotion, etc.," and $60,000 for "going concern." The latter sum we understand to be an expression of the added value of the plant as a whole over the sum of the values of its component parts, which is attached to it because it is in active and successful operation, and earning a return. We express no opinion as to the propriety of including these two items in the valuation of the plant, for the purpose for which it is valued in this case, but leave that question to be considered when it necessarily arises. We assume, without deciding, that these items were properly added in this case. The value of the tangible property found by the master is, of course, $608,000 lessened by $70,000, the value attributed to the intangible property, making $538,000. This valuation was determined by the master by ascertaining what it would cost, at the date of the ordinance, to reproduce the existing plant as a new plant. The cost of reproduction is one way of ascertaining the present value of a plant like that of a water company, but that test would lead to obviously incorrect results, if the cost of reproduction is not diminished by the depreciation which has come from age and use. The company contends that the master, in fixing upon the valuation of the tangible property, did make an allowance for depreciation, but we are unable to agree to this. The master nowhere says that he made allowance for depreciation and the language of his report is inconsistent with such a reduction. The figures which he adopts are those of a "fair contractor's price." The basis

of his calculation was the testimony of an opinion witness called by the company. That witness submitted a table, which avowedly showed the cost of reproduction without allowance for depreciation. The values testified to by him were adopted by the master in the great majority of cases. The witness' valuation of the tangible property was somewhat reduced by the master, but the reductions were not based upon the theory of depreciation, but upon a difference of opinion as to the reproduction cost.

The cost of reproduction is not always a fair measure of the present value of a plant which has been in use for many years. The items composing the plant depreciate in value from year to year in a varying degree. Some pieces of property, like real estate for instance, depreciate not at all, and sometimes, on the other hand, appreciate in value. But the reservoirs, the mains, the service pipes, structures upon real estate, standpipes, pumps, boilers, meters, tools and appliances of every kind begin to depreciate with more or less rapidity from the moment of their first use. It is not easy to fix at any given time the amount of depreciation of a plant whose component parts are of different ages with different expectations of life. But it is clear that some substantial allowance for depreciation ought to have been made in this case. The officers of the company, alio intuitu, estimated what they called "incomplete depreciation" of this plant (which we understand to be the depreciation of the surviving parts of it still in use) at $77,000, which is 14 per cent of the master's appraisment of the tangible property. A witness called by the city placed the reproduction value of the tangible property at $363,000, and estimated the allowance that should be made for depreciation at $118,000, or 32 per cent. In the view we take of the case it is not necessary that we should undertake the difficult task of determining exactly how much the master's valuation of the tangible property ought to have been diminished by the depreciation which

that property had undergone. It is enough to say that there should have been a considerable diminution, sufficient at least to raise the net income found by the court above 6 per cent upon the whole valuation thus diminished. If, for instance, the master's valuation should be diminished by $50,000, allowed for depreciation, the net earnings found by him would show a return of substantially 6.5 per cent.

Counsel for the company urge rather faintly that the capitalization of the company ought to have some influence in the case in determining the valuation of the property. It is a sufficient answer to this contention that the capitalization is shown to be considerably in excess of any valuation testified to by any witness, or which can be arrived at by any process of reasoning. The cause for the large variation between the real value of the property and the capitalization in bonds and preferred and common stock is apparent from the testimony. All, or substantially all, the preferred and common stock was issued to contractors for the construction of the plant, and the nominal amount of the stock issued was greatly in excess of the true value of the property furnished by the contracts. A single instance taken from the testimony will illustrate this. At the very start of the enterprise a contract was entered into for the construction of a part of the plant, which was of a value slightly, if at all, exceeding $125,000. The price paid the contractor was $125,000 in bonds and $200,000 in common stock. Other contracts for construction showed a like disproportion between value furnished and nominal capitalization received for that value. It perhaps is unnecessary to say that such contracts were made by the company with persons who, at the time, by stock ownership, controlled its action. Bonds and preferred and common stock issued under such conditions afford neither measure of nor guide to the value of the property.

We think that the master and the court erred in another respect, which might affect in an important way the amount which could have been realized under the operation of the ordinance. This error consisted in the manner of deducting the reductions necessarily made by the ordinance. The evidence in the record is not entirely clear, though, after careful consideration, we think it shows the following state of facts: The company's schedule prescribed certain rates, which we may call the book rates, but upon a large part of them a discount of 5 per cent was made if they were promptly paid. The consumers very generally availed themselves of this discount. The discount rates constituted the actual collections, and may be called the actual rates. .For the fiscal year which was examined the book rates amounted, in round numbers, to $93,000, while the actual rates amounted, as the master found, to $88,000. The percentage of reduction made by the ordinance was computed to be 22.88. This percentage was ascertained either by comparing the book rates with the ordinance rates, or by comparing the actual rates with the ordinance rates, still further reduced by a 5 per cent discount for prompt payment, which comes to substantially the same result. The fallacy in the process employed by the master consisted in substance in assuming that the ordinance rates would be subject to a discount for prompt payment. The company, it is true, might, if it chose, allow such a discount from the ordinance rates, but the ordinance required no discount from the rates established by it, and the company therefore was bound to offer none. If it stood upon the letter of the ordinance, as it had the right to do, and exacted from the consumers the full charges prescribed by the ordinance, the amount which would have been realized would have been over $4,000 more than that found by the master, or a net income of not less than $40,000. Doubtless, the abandonment of the common method of discount for prompt payment would de-

prive the company of an efficient aid to the quick collection of its bills, but in the case of a prime necessity like water there are other methods of enforcing prompt payment, though it is not unlikely that the elimination of the discount rate would add somewhat to the cost of collection and thereby to the operating expenses.

A brief recently filed by the city, to which no reply has been made, seems to show conclusively that there was still another error in ascertaining the amount of reduction effected by the ordinance. What was actually done was to deduct the 22.88 reduction from the actual water rates (excluding hydrant rentals, which were not changed), but of these actual water rates $10,000 came from territory outside of the corporate limits, which was not affected by the ordinance. From this $10,000 no percentage should have been deducted. The reduction therefore, was too large by over $2,000. If this correction should be made, it would amount to nearly four-tenths of one per cent on the capitalization.

We are also of opinion that the master and the court erroneously excluded evidence which had an important bearing upon the true earning capacity of the company under the ordinance. A clear appreciation of this error can be best obtained by a comprehensive review of the hearing. The company's original case was based upon an elaborate analysis of the cost of construction. To arrive at the present value of the plant large deductions were made on account of the depreciation. This depreciation was divided into complete depreciation and incomplete depreciation. The complete depreciation represented that part of the original plant which through destruction or obsolescence had actually perished as useful property. The incomplete depreciation represented the impairment in value of the parts of the plant which remained in existence and were continued in use. It was urgently contended that in fixing upon the value of the plant upon which

the company was entitled to earn a reasonable return the amounts of complete and incomplete depreciation should be added to the present value of the surviving parts. The court refused to approve this method, and we think properly refused. A water plant, with all its additions, begins to depreciate in value from the moment of its use. Before coming to the question of profit at all the company is entitled to earn a sufficient sum annually to provide not only for current repairs but for making good the depreciation and replacing the parts of the property when they come to the end of their life. The company is not bound to see its property gradually waste, without making provision out of earnings for its replacement. It is entitled to see that from earnings the value of the property invested is kept unimpaired, so that at the end of any given term of years the original investment remains as it was at the beginning. It is not only the right of the company to make such a provision, but it is its duty to its bond and stockholders, and, in the case of a public service corporation at least, its plain duty to the public. If a different course were pursued the only method of providing for replacement of property which has ceased to be useful would be the investment of new capital and the issue of new bonds or stocks. This course would lead to a constantly increasing variance between present value and bond and stock capitalization—a tendency which would inevitably lead to disaster either to the stockholders or to the public, or both. If, however, a company fails to perform this plain duty and to exact sufficient returns to keep the investment unimpaired, whether this is the result of unwarranted dividends upon over-issues of securities, or of omission to exact proper prices for the output, the fault is its own. When, therefore, a public regulation of its prices comes under question the true value of the property then employed for the purpose of earning a return cannot be

enhanced by a consideration of the errors in management which have been committed in the past.

After the company had closed its case the city undertook to determine the present value of the company's property by the plain method of ascertaining the cost of reproduction, diminished by depreciation. In its case in rebuttal, the company followed the same method, though the results differed largely, and, as we have seen, no proper allowance for depreciation was made. In the course of presenting its case the city offered evidence of the net income of some years subsequent to the passage of the ordinance. The case is peculiar. The company has never observed the ordinance. The suit was begun nine months after its enactment and tried considerably later. In the meantime the company's gross income had largely increased. But the decision in the court below was based solely on the operations of the fiscal year ending March 31, 1901, and the amount of net income ascertained, namely, $36,000, was obtained by applying the reductions made by the ordinance to the operations of that fiscal year. We think it was an error to confine the investigation to, and base the judgment upon, that year alone. The precise subject of inquiry was, what would be the effect of the ordinance in the future. The operations of the preceding fiscal year, or of any other past fiscal year, were valueless if the year was abnormal, and were only of significance so far as they foretold the future. If, as in this case, sufficient time has passed, so that certainty instead of prophecy can be obtained, the certainty would be preferable to the prophecy. In this case there could be no absolute certainty, because the ordinance had never been put in operation. But evidence of the operations of the years succeeding to the ordinance is relevant and of great importance, and by a consideration of such evidence a much greater degree of certainty could be obtained. Suppose, by way of illustration, that before bringing suit the com-

pany had put the ordinance into effect and had observed it for a number of years, and the result showed that a sufficient net income had been realized, is it possible that a suit then could be brought and the evidence confined to a period prior to the ordinance, and by a process of speculation the conclusion reached that the ordinance would be confiscatory? Some evidence regarding the income of the company, after the passage of the ordinance, is in the record, but it subsequently was excluded from consideration. It showed an increase of gross and net earnings, but also an increase in the property devoted to the public use. We are unable to say what the effect of the evidence excluded would be; all we can say is, that the inquiry was unduly limited by the exclusion of the evidence of the operation of subsequent years.

It follows from what has been said that the judgment of the court below cannot stand. There was error in the appraisement of the present value of the plant, in the deduction of the reductions made by the ordinance, and in the exclusion of evidence relating to the operations of the company after the enactment of the ordinance.

If hereafter it shall appear, under the actual operation of the ordinance, that the returns allowed by it operate as a confiscation of property, nothing in this judgment will prevent another application to the courts of the United States or to the courts of the State of Tennessee. But as the case now stands there is no such certainty that the rates prescribed will necessarily have the effect of denying to the company such a return as would avoid confiscation. For these reasons—

The decree is reversed and the case remanded to the court below with directions to dismiss the bill without prejudice.

WILCOXET AL. V. CONSOLIDATED GAS CO.

U. S. REPORTS 212 19--55

[Mr. Justice Peckham delivered the opinion of the court.]

At the outset it seems to us proper to notice the views regarding the action of the court below, which have been stated by counsel for the appellants, the Public Service Commission, in their brief in this court. They assume to criticise that court for taking jurisdiction of this case, as precipitate, as if it were a question of discretion or comity, whether or not that court should have heard the case. On the contrary, there was no discretion or comity about it. When a federal court is properly appealed to in a case over which it has by law jurisdiction it is the duty to take jurisdiction (Cohens v. Virginia, 6 Wheat. 264, 404), and in taking it that court cannot be truthfully spoken of as precipitate in its conduct. That the case may be one of local interest only is entirely immaterial, so long as the parties are citizens of different states or a question is involved which by law brings the case within the jurisdiction of a federal court. The right of a party plaintiff to choose a federal court where there is a choice cannot be properly denied. In re Metropolitan Railway Receivership, 208 U. S. 90-110; Prentis v. Atlantic Coast Line et al., 211 U. S. 210. In the latter case it was said that a plaintiff could not be forbidden to try the facts upon which his right to relief is based before a court of his own choice, if otherwise competent. It is true an application for an injunction was denied in that case because the plaintiff should in our opinion have taken the appeal allowed him by the law of Virginia while the rate of fare in litigation was still at the legislative stage, so as to make it absolutely certain

that the officials of the state would try to establish and enforce an unconstitutional rule.

The case before us is not like that. It involves the constitutionality, with reference to the Federal Constitution, of two acts of the legislature of New York, and it is one over which the Circuit Court undoubtedly had jurisdiction under the act of Congress, and its action in taking and hearing the case cannot be the subject of proper criticism.

An examination of the record herein, with reference to the questions involved in the merits, shows that the act under which the Gas Commission was appointed was subsequently to the commencement and trial of this suit, declared, on grounds not here material, to be unconstitutional by the Court of Appeals of New York. (191 N. Y. 123, February 18, 1908.) The order made by the commission must therefore be regarded as invalid. It is not important in this case, because the act of the legislature of 1906, makes the same provision as to the price of gas to consumers other than the city that the order does. We have as remaining to be considered the above-mentioned two acts of the legislature.

The question arising is as to the validity of the acts limiting the rates for gas to the prices therein stated. The rule by which to determine the question is pretty well established in this court. The rates must be plainly unreasonable to the extent that their enforcement would be equivalent to the taking of property for public use without such compensation as under the circumstances is just both to the owner and the public. There must be a fair return upon the reasonable value of the property at the time it is being used for the public. (San Diego Land & Town Company v. National City, 174 U. S. 739, 757; Same v. Jasper, 189 U. S. 439, 442.)

Many of the cases are cited in Knoxville v. Water Co., just decided, ante, p. 1. The case must be a clear one be-

fore the courts ought to be asked to interfere with state legislation upon the subject of rates, especially before there has been any actual experience of the practical result of such rates. In this case the rates have not been enforced as yet, because the bill herein was filed and an injunction obtained restraining their enforcement before they came into actual operation.

In order to determine the rate of return upon the reasonable value of the property at the time it is being used for the public, it, of course, becomes necessary to ascertain what that value is. A very great amount of evidence was taken before the master upon that subject, which is included in five large volumes of the record. Valuations by expert witnesses were given as to the value of the real estate owned by the complainant, and as to the value of the mains, service pipes, plants, meters and miscellaneous personal property.

The value of real estate and plant is to a considerable extent matter of opinion, and the same may be said of personal estate when not based upon the actual cost of material and construction. Deterioration of the value of the plant, mains, and pipes is also to some extent based upon opinion. All these matters make questions of value somewhat uncertain; while added to this is an alleged prospective loss of income from a reduced rate, a matter also of much uncertainty, depending upon the extent of the reduction and the probable increased consumption, and we have a problem as to the character of a rate which is difficult to answer without a practical test from actual operation of the rate. Of course, there may be cases where the rate is so low upon any reasonable bases of valuation that there can be no just doubt as to its confiscatory nature, and in that event there should be no hesitation in so deciding and in enjoining its enforcement without waiting for the damage which must inevitably accompany the operation of the business under the objectionable rate. But

where the rate complained of shows in any event a very narrow line of division between possible confiscation and proper regulation, as based upon the value of the property found by the court below, and the division depends upon opinions as to value, which differ considerably among the witnesses, and also upon the results in the future of operating under the rate objected to, so that the material fact of value is left in much doubt, a court of equity ought not to interfere by injunction before a fair trial has been made of continuing the business under that rate, and thus eliminating as far as is possible, the doubt arising from opinions as opposed to facts.

A short history of the complainant, as to its incorporation and its capital, and the method by which the value of its franchises was arrived at, will render the further examination of the case more intelligible.

Prior to 1884 there were seven gaslight companies in New York City, each operated under separate charters, granted at different times between the years 1823 and 1865 or 1871. They each had the right to use the streets of certain portions of the city for the purpose of laying their mains and service pipes in order to furnish gas to the city and the citizens. Not one of the companies had ever been called upon to pay a penny for such right, but the grant to each was in that aspect a gratuity. It was not, at the time of granting franchises such as these, the custom to pay for them.

In 1884, by chapter 367 of the laws of that year, authority to consolidate manufacturing corporations was granted upon conditions mentioned in the act. The directors of the corporations proposing to consolidate were to make an agreement for consolidation, embracing, among other things, the amount of capital and the number of shares of stock into which it should be divided, the capital not to be in amount more "than the fair aggregate value of the property, franchises and rights of the several companies

to be consolidated." The agreement was not to be valid until submitted to the stockholders of each of the companies and approved by two-thirds of each. The constituent companies, which were afterwards consolidated under their agreement, and pursuant to the act mentioned, were six in number, the seventh, the Mutual Company, withdrawing. The companies agreed upon the valuation of their property, which was to be paid for in the stock of the consolidated company, and the original stock held by the stockholders of each company was surrendered to the consolidated company. The value of the franchises of all the companies was set at the figure of $7,781,000. The court below said that the master reported there was little direct evidence before him as to the value of the franchises, to which the court added that if the master, by direct evidence, meant testimony of the same kind regarding their value as had been offered regarding every item of tangible property, there was none at all.

The court further stated "that it does not appear in the evidence how the valuation of the franchises was measured, or why the figures selected were chosen, but that it was true that when complainant was organized, in 1884, under the consolidation statute, which in terms permitted it to acquire the property and franchises of the other companies, it issued stock of the par value of $7,781,000, representing the franchises it then acquired and nothing else, and that the stock was held by purchasers, who, I am compelled to think, had a right to rely upon legal protection for legally issued stock." It is not, of course, contended there was special stock issued for this particular item, but it was included in the total sum for which the consolidated company issued its stock and upon its receipt the stockholders in the various companies surrendered their stock in those companies. The result was that the amount of the stock issued by the consolidated company was increased by $7,781,000, representing a value of franchises

which was agreed upon by the stockholders in the companies, and which had never cost any of them a single penny.

It cannot be disputed that franchises of this nature are property and cannot be taken or used by others without compensation. Monongahela Co. v. United States, 148 U. S. 312; People v. O'Brien, 111 N. Y., 1, and cases cited. The important question is always one of value. Taking their value in this case as arrived at by agreement of their owners, at the time of the consolidation, that value has been increased by the finding of the court below to the sum of $12,000,000 at the time of the commencement of this suit. The trial court said: "If, however, complainant's franchises were worth $7,781,000 in 1884, and its tangible property, at the same time, was appraised (as appears in evidence) at $30,000,000 (in round figures), then since complainant's business (in sales volume) has, in twenty-three years, almost quadrupled, and its tangible assets grown to $47,000,000, it appears to me that a fair method of fixing value of the franchises in 1905 is to assume the same growth in value for the franchises as is demonstrated by the evidence in the case of tangible property. If, therefore, the franchise valuation of 1884 was proportioned to personalty and realty of $30,000,000, a franchise valuation proportioned to $47,000,000 in 1905 would be over $12,000,000. This, I think, a logical result from the assumption I am compelled to start with, i. e., that franchises have a separate and independent value. But there is, however, no method of valuing franchises, except by a consideration of earnings; earnings must be proportioned to assets; and both kinds of assets, tangible and intangible, must stand upon the same plane of valuation; having, therefore, a measure of growth of tangible assets from 1884 to 1905, the franchise assets must be assumed to have grown in the same proportion. I find that the value of complainant's franchises at the date of inquiry was not less than $12,000,000,

making a total valuation of $59,000,000, upon which the probable return is $3,030,000, or very considerably less than 6 per cent." The judge stated his own views as opposed to including these franchises in the property upon the value of which a return is to be calculated in fixing the amount of rates, but held that he was bound by decided cases to hold against his personal views.

We are not prepared to hold with the court below as to the increased value which it attributes to the franchises. It is not only too much a matter of pure speculation, but we think it is also opposed to the principle upon which such valuation should be made. This corporation is one of that class which is subject to regulation by the legislature in the matter of rates, provided they are not made so low as to be confiscatory. The franchises granted the various companies and held by complainant consisted in the right to open the streets of the city and lay down mains and use them to supply gas, subject to the legislative right to so regulate the price for the gas as to permit not more than a fair return (regard being had to the risk of the business) upon the reasonable value of the property at the time it is being used for the public.

The evidence shows that from their creation, down to the consolidation in 1884, these companies had been free from legislative regulation upon the amount of the rates to be charged for gas. They had been most prosperous and had divided very large earnings in the shape of dividends to their stockholders, dividends which are characterized by the Senate committee, appointed in 1885 to investigate the facts surrounding the consolidation, as enormous. The report of that committee shows that several of the companies had averaged, from their creation, dividends over 16 per cent, and the six companies in the year 1884 paid a dividend upon capital which had been increased by earnings, as in the case of the Manhattan and the New

York, of 18 per cent, and, had it been upon the money actually paid in, it would have been nearly 25 per cent.

The committee also said in the same report that these "franchises were in force November 10, 1884, the time of the consolidation, and the money invested in them was earning the same enormous dividends. So far as the evidence shows, there was nothing in the condition of affairs on the 10th of November to indicate that these franchises would not be as valuable for the next twenty years as they had been in the past. There were gas companies enough in the city with a capacity capable of supplying the demands for the next twenty years. A law was on our statute books that actually prohibited the laying of any more gas pipes in the streets. The gas companies had an agreement among themselves, fixing the price of gas at a figure that paid these dividends. The people were paying this price, as they had in the past, without objection or protest. This price may have been too high, and the dividends were excessive, but they were not illegal, and the valuation of the franchises computed upon these dividends, and that state of facts cannot be called a violation of a law that expressly authorized it to be done, unless such valuation was too high."

The committee, upon these facts, were of opinion that the valuation of $7,781,000 for the franchises was not more than their fair aggregate value.

Assuming, as the committee did, that the company would be permitted to charge the same prices in the future which in the past had resulted in these "enormous" or "excessive" dividends, it need not be matter of surprise that a franchise by means of which such dividends had been possible was not regarded as overvalued at the sum stated in 1884.

We think that under the above facts the courts ought to accept the valuation of the franchises fixed and agreed upon under the act of 1884 as conclusive at that time. The

valuation was provided for in the act, which was followed by the companies, and the agreement regarding it has been always recognized as valid, and the stock has been largely dealt in for more than twenty years past on the basis of the validity of the valuation and of the stock issued by the company.

But although the state ought, for these reasons, to be bound to recognize the value agreed upon in 1884 as part of the property upon which a reasonable return can be demanded, we do not think an increase in that valuation ought to be allowed upon the theory suggested by the court below. Because the amount of gas supplied has increased to the extent stated, and the other and tangible property of the corporations has increased so largely in value, is not, as it seems to us, any reason for attributing a like proportional increase in the value of the franchises. Real estate may have increased in value very largely, as also the personal property, without any necessary increase in the value of the franchises. Its past value was founded upon the opportunity of obtaining these enormous and excessive returns upon the property of the company, without legislative interference with the price for the supply of gas, but that immunity for the future was, of course, uncertain, and the moment it ceased and the legislature reduced the earnings to a reasonable sum the great value of the franchises would be at once and unfavorably affected, but how much so it is not possible for us now to see. The value would most certainly not increase. The question of the regulation of rates did from time to time thereafter arise in the legislature, and finally culminated in these acts which were in existence when the court below found this increased value of the franchises. We cannot, in any view of the case, concur in that finding.

This increase in value did, however, form part of the sum upon which the court below held the complainant was entitled to a return. That court found the value of the

tangible assets actually employed at the time of the commencement of this suit in the business of supplying gas by the complainant to be $47,831,435, to which it added the $12,000,000 as the value of the franchises as found by it, making the total of $59,831,435 upon which it held that the company was entitled to a return of 6 per cent, being $3,589,886.10. It also found its total net income for the year 1905 amounted to $5,881,192.45, almost 10 per cent upon the sum above named. Altering the finding of the court so far only as to place the value of the franchises at the time agreed upon in 1884, $7,781,000, the total value upon that basis of the property employed by the company would be $55,612,435, upon which 6 per cent would be $3,336,-746.10, while the sum, estimated as the return on eighty-cent gas would have been $3,024,592.14, which is nearly 5½ per cent on the above total of $55,612,435.

What has been said herein regarding the value of the franchises in this case has been necessarily founded upon its own peculiar facts, and the decision thereon can form no precedent in regard to the valuation of franchises generally, where the facts are not similar to those in the case before us. We simply accept the sum named as the value under the circumstances stated.

There is no particular rate of compensation which must in all cases and in all parts of the country be regarded as sufficient for capital invested in business enterprises. Such compensation must depend greatly upon circumstances and locality; among other things, the amount of risk in the business is a most important factor, as well as the locality where the business is conducted and the rate expected and usually realized there upon investments of a somewhat similar nature with regard to the risk attending them. There may be other matters which in some cases might also be properly taken into account in determining the rate which an investor might properly expect or hope to receive and which he would be entitled to without legislative inter-

ference. The less risk, the less right to any unusual returns upon the investments. One who invests his money in a business of a somewhat hazardous character is very properly held to have the right to a larger return without legislative interference, than can be obtained from an investment in government bonds or other perfectly safe security. The man that invested in gas stock in 1823 had a right to look for and obtain, if possible, a much greater rate upon his investment than he who invested in such property in the city of New York years after the risk and danger involved had been almost entirely eliminated.

In an investment in a gas company, such as complainant's, the risk is reduced almost to a minimum. It is a corporation, which in fact, as the court below remarks, monopolizes the gas service of the largest city in America, and is secure against competition under the circumstances in which it is placed, because it is a proposition almost unthinkable that the city of New York would, for purposes of making competition, permit the streets of the city to be again torn up in order to allow the mains of another company to be laid all through them to supply gas which the present company can adequately supply. And, so far as it is given us to look into the future, it seems as certain as anything of such a nature can be, that the demand for gas will increase, and, at the reduced price, increase to a considerable extent. An interest in such a business is as near a safe and secure investment as can be imagined with regard to any private manufacturing business, although it is recognized at the same time that there is a possible element of risk, even in such a business. The court below regarded it as the most favorably situated gas business in America, and added that all gas business is inherently subject to many of the vicissitudes of manufacturing. Under the circumstances, the court held that a rate which would permit a return of 6 per cent would be enough to avoid the charge of confiscation, and for the

reason that a return of such an amount was the return ordinarily sought and obtained on investments of that degree of safety in the city of New York.

Taking all facts into consideration, we concur with the court below on this question, and think complainant is entitled to 6 per cent on the fair value of its property devoted to the public use. But assuming that the company is entitled to 6 per cent upon the value of its property actually used for the public, the total value fixed by the court below is, as we have seen, much too large. We must first strike out the increased value of the franchises asserted by the court over the amount agreed upon in 1884, when the companies were consolidated. We also find that the total value of the tangible property is made up of several items, two of which are—

Real estate	$11,985,455
Plants	15,000,00

Both depend largely upon the opinions of expert witnesses as to the value of that kind of property. Where a large amount of the total value of a mass of different properties consists in the value of real estate, which is only ascertained by the varying opinions of expert witnesses, and where the opinions of the plaintiffs' witnesses differ quite radically from those of the defendants', it is apparent that the total value must necessarily be more or less in doubt. It, in other words, becomes matter of speculation or conjecture to a great extent. It may be, as already suggested, that in many cases the rates objected to might be so low that there could be no reasonable doubt of their inadequacy upon any fair estimate of the value of the property. In such event the enforcement of the rates should be enjoined even in a case where the value of the property depends upon the value to be assigned to real estate by the evidence of experts. But there may be other cases where the evidence as to the probable result of the rates in controversy would show they were so nearly adequate that

nothing but a practical test could satisfy the doubt as to their sufficiency.

In this case a slight reduction in the estimated value of the real estate, plants and mains, as given by the witnesses for complainant, would give a 6 per cent return upon the total value of the property as above stated. And again, increased consumption at the lower rate might result in increased earnings, as the cost of furnishing the gas would not increase in proportion to the increased amount of gas furnished.

The elevated railroads in New York when first built charged ten cents for each passenger, but when the rate was reduced to five cents it is common knowledge that their receipts were not cut in two, but that from increased patronage the earnings increased from year to year, and soon surpassed the highest sum ever received upon the ten-cent rate.

Of course, there is always a point below which a rate could not be reduced and at the same time permit the proper return on the value of the property, but it is equally true that a reduction in rates will not always reduce the net earnings, but on the contrary may increase them. The question of how much an increased consumption under a less rate will increase the earnings of complainant, if at all, at a cost not proportioned to the former cost, can be answered only by a practical test. In such a case as this, where the other data upon which the computation of the rate of return must be based, are from the evidence so uncertain, and where the margin between possible confiscation and valid regulation is so narrow we cannot say there is no fair or just doubt about the truth of the allegation that the rates are insufficient.

The complainant also contends that the state having taxed it upon its franchises cannot be heard to deny their existence or their value as taxed.

The fact that the state has taxed the company upon

its franchises at a greater value than is awarded them here, is not material. Those taxes, even if founded upon an erroneous valuation, were properly treated by the company as part of its operating expense, to be paid out of its earnings before the net amount could be arrived at applicable to dividends, and if such latter sums were not sufficient to permit the proper return on the property used by the company for the public then the rate would be inadequate. The future assessment of the value of the franchises, it is presumed, will be much lessened if it is seen that the great profits upon which that value was based are largely reduced by legislative action. In that way the consumer will be benefited by paying a reduced sum (although indirectly) for taxes.

We are also of opinion that it is not a case for a valuation of "good-will." The master combined the franchise value with that of good-will, and estimated the total value at $20,000,000.

The complainant has a monopoly in fact, and a consumer must take gas from it or go without. He will resort to the "old stand," because he cannot get gas anywhere else. The court below excluded that item, and we concur in that action.

And we concur with the court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase. This is, at any rate, the general rule. We do not say there may not possibly be an exception to it, where the property may have increased so enormously in value as to render a rate permitting a reasonable return upon such increased value unjust to the public. How such facts should be treated is not a question now before us, as this case does not present it. We refer to the matter only for

the purpose of stating that the decision herein does not prevent an inquiry into the question when, if ever, it should be necessarily presented.

The matter of the increased cost of the gas, resulting from the provisions of the acts, as to making the gas equal to 22 candle-power, is also alleged as a reason for inadequacy of rate.

It appears that the average candle-power actually produced in the first six months of the year 1905 was 22, while but 20 candle-power was exacted by law, and for the last six months of that year, while 22 candle-power was exacted, the average amount was 24.19. This expense was included in the operating expense of that year, which resulted in the net earnings above mentioned, while the company was complying with the requirements of the act in this particular.

It is unnecessary, therefore, to further inquire as to the additional expense caused by this requirement.

Again, it has been asserted that the laws are unconstitutional, because of the provision as to pressure, and also by reason of the penalties which a violation of the acts may render a corporation liable to.

The acts provide that the pressure of the gas in service mains at any distance from the place of manufacture shall not be less than one inch or more than two and a half inches.

The evidence shows that to put a pressure such as is demanded by the acts upon the mains and other service pipes in their present condition would be to run a great risk of explosion, and consequent disaster. Before compliance with this provision would be safe the mains and other pipes would have to be strengthened throughout their whole extent, and at an expenditure of many millions of dollars, from which no return could be obtained at the rates provided in the acts. This would take from the complainant the ability to secure the return to which it is entitled

upon its property, used for supplying gas, and the provisions as to the amount of pressure is therefore void. This particular duty imposed by the acts is, however, clearly separable from the enactments as to rates, and we have no doubt that the remainder of the statute would have been enacted, even with that provision omitted.

The obligation would remain upon the company to have a pressure sufficient to insure a light of 22 candle-power, as provided in the acts.

We are of the same opinion as to the penalties provided for a violation of the acts. They are not a necessary or inseparable part of the acts, without which they would not have been passed. If these provisions as to penalties have been properly constructed by the court below, they undoubtedly are void, within the principle decided in Ex parte Young, 209 U. S. 123, and the cases there cited, because so enormous and overwhelming in their amount.

When the objectionable part of a statute is eliminated, if the balance is valid and capable of being carried out, and if the court can conclude it would have been enacted if that portion which is illegal had been omitted, the remainder of the statute thus treated is good. (Reagan v. Trust Co., 154 U. S. 362, 395; Berea College v. Commonwealth of Kentucky, 211 U. S. 45, 54.) This is a familiar principle.

Lastly, it is objected that there is an illegal discrimination as between the city and the consumers individually. We see no discrimination which is illegal or for which good reasons could not be given. But neither the city nor the consumers are finding any fault with it, and the only interest of the complainant in the question is to find out whether, by the reduced price to the city, the complainant is upon the whole unable to realize a return sufficient to comply with what it has the right to demand. What we have already said applies to the facts now in question.

We cannot see from the whole evidence that the price

fixed for gas supplied to the city by the wholesale, so to speak, would so reduce the profits from the total of the gas supplied as to thereby render such total profits insufficient as a return upon the property used by the complainant. So long as the total is enough to furnish such return it is not important that with relation to some customers the price is not enough. (Minneapolis, etc., v. Minnesota, 186 U. S. 257; Atlantic Coast Line v. North Carolina Commission, 206 U. S. 1.)

Upon a careful consideration of the case before us we are of opinion that the complainant has failed to sustain the burden cast upon it of showing beyond any just or fair doubt that the acts of the legislature of the State of New York are in fact confiscatory.

It may possibly be, however, that a practical experience of the effect of the acts by actual operation under them might prevent the complainant from obtaining a fair return, as already described, and in that event complainant ought to have the opportunity of again presenting its case to the court. To that end we reverse the decree, with directions to dismiss the bill without prejudice, and

It is so ordered.

THE BALANCE SHEET OF A RAILWAY

INTRODUCTORY LETTER.

Interstate Commerce Commission,
Bureau of Statistics and Accounts,
Washington, June 21, 1909.

To Carriers Concerned:

The Form of General Balance Sheet Statement promulgated . . . will be incorporated in the Forms for Annual Report of Carriers to the Interstate Commerce Commission for the year ending June 30, 1910, unless modified by an order of the Commission before that date. In any case, carriers whose current accounts are kept in such a manner as to enable them to report on the balance-sheet statement herewith promulgated will be able to make any balance-sheet statement which the Commission may finally accept as satisfactory.

There will shortly be issued a Special Report Series Circular calling for the adjustment of assets and liabilities as of June 30, 1909, to the form of balance-sheet statement promulgated under the present order, with a view of testing its practicability and of collating all difficulties incident to its use. Any modification, should modification be thought desirable, will be made as the result of this test.

Henry C. Adams,
In charge of Statistics and Accounts.

FORM OF GENERAL BALANCE SHEET STATEMENT.

Assets.

Property Owned as Investment:

I. Physical Property Owned—

1-A. Road and Equipment to June 30, 1907—
(a) Road.
(b) Equipment.
1-B. Road and Equipment since June 30, 1907—
(a) Road.
(b) Equipment.
(c) General Expenditures.

II. Securities Owned—
2. Securities of Proprietary, Affiliated, and Controlled Companies—Pledged—
(a) Stocks.
(b) Funded Debt.
(c) Miscellaneous.
3. Securities Issued or Assumed—Pledged—
(a) Stocks.
(b) Funded Debt.
(c) Miscellaneous.
4. Securities of Proprietary, Affiliated, and Controlled Companies—Unpledged—
(a) Stocks.
(b) Funded Debt.
(c) Miscellaneous.

III. Investments—
5. Advances to Proprietary, Affiliated, and Controlled Companies for Construction, Equipment, and Betterments.
6. Other Permanent Investments—
(a) Physical Property.
(b) Securities.

Working Assets:
7. Cash.
8. Marketable Securities—
A. Securities Issued or Assumed—Unpledged—
(a) Stocks.
(b) Funded Debt.
(c) Miscellaneous.

B. Other Marketable Securities—
(a) Stocks.
(b) Funded Debt.
(c) Miscellaneous.

9. Loans and Bills Receivable.
10. Net Traffic, Car Mileage, and Per Diem Balance.
11. Net Balance Due from Agents and Conductors.
12. Miscellaneous Accounts Receivable.
13. Materials and Supplies.
14. Other Working Assets.

Deferred Debit Items:

15. Advances—
    (a) Advances to Proprietary, Affiliated, and Controlled Companies.
    (b) Working Funds.
    (c) Other Advances.
16. Insurance Premiums Paid in Advance.
17. Taxes Paid in Advance.
18. Discount on Securities Issued—
    (a) Discount on Stock.
    (b) Discount on Funded Debt.
19. Property Abandoned, Chargeable to Operating Expenses.
20. Cash and Securities in Sinking and Redemption Funds.
21. Cash and Securities in Insurance and Other Special Funds.
22. Cash and Securities in Special Trust Funds.
23. Items in Suspense.

Deficit:

24. Profit and Loss—Balance.

Liabilities.

Stock:

25. Capital Stock—
    (a) Common Stock.

(b) Preferred Stock.
(c) Debenture Stock.

26. Receipts Outstanding for Capital Stock.
27. Stock Liability for Conversion of Outstanding Securities of Constituent Companies.
28. Premium Realized on Capital Stock Sold.

Mortgage, Bonded, and Secured Debt:

29. Funded Debt—
    (a) Mortgage Bonds.
    (b) Collateral Trust Bonds.
    (c) Plain Bonds, Debentures, and Notes.
    (d) Income Bonds.
    (e) Equipment Trust Obligations.
    (f) Miscellaneous Funded Obligations.
30. Receipts Outstanding for Funded Debt.
31. Premium Realized on Funded Debt Sold.
32. Receivers' Certificates.
33. Obligations for Advances Received for Construction, Equipment, and Betterments.

Working Liabilities:

34. Loans and Bills Payable.
35. Net Traffic, Car Mileage, and Per Diem Balance.
36. Audited Vouchers and Wages Unpaid.
37. Miscellaneous Accounts Payable.
38. Matured Dividends, Interest, and Rents Unpaid.
39. Matured Mortgage, Bonded, and Secured Debt Unpaid.
40. Working Advances Due to Other Companies.
41. Other Working Liabilities.

Accrued Liabilities Not Due:

42. Dividends Declared and Interest and Rents Accrued, Not Due.
43. Taxes Accrued.

Deferred Credit Items:

44. Operating Reserves—
    (a) Reserves for Replacement of Property.

(b) Reserves for Other Purposes.

45. Liability on Account of Special Trust Funds.

46. Items in Suspense.

Appropriated Surplus:

47. Surplus Reserves—

(a) Reserves Invested in Sinking and Redemption Funds.

(b) Reserves Invested in Insurance and Other Special Funds.

(c) Reserves Not Specifically Invested.

48. Additions to Property through Income since June 30, 1907.

Free Surplus:

49. Profit and Loss—Balance.

TEXT EXPLANATORY OF BALANCE SHEET ACCOUNTS.

Assets.

Property Owned as Investment.

I. Physical Property Owned.

1-A. Road and Equipment to June 30, 1907.

This account should include the balances carried in the General Ledger showing the value of Road and Equipment as it stood on June 30, 1907, subdivided between (a) Road and (b) Equipment, when the subdivision can be accurately made.

1-B. Road and Equipment since June 30, 1907.

This account should include amounts expended and charged in accordance with the Classifications of Expenditures for Road and Equipment and Expenditures for Additions and Betterments since June 30, 1907. These amounts should be subclassified: (a) Road, (b) Equipment, (c) General Expenditures.

II. Securities Owned.

2. Securities of Proprietary, Affiliated, and Controlled Companies—Pledged.

This account should include the book value of securities of proprietary, affiliated, and controlled companies whose property is used by or forms a part of the railway system of the respondent company, which securities are pledged as collateral security for any of the respondent company's funded debt or other outstanding obligations. It should include securities of union depot, terminal, bridge, ferry, and similar companies owned by the respondent company and pledged to secure its outstanding obligations when the property of those companies is used by the respondent company in the transaction of its own transportation business.

Amounts reported in this account should be classified under the subheadings: (a) Stocks, (b) Funded Debt, (c) Miscellaneous.

See text of accounts Nos. 25 and 29 for description of items classed as "Capital Stock" and "Funded Debt." Among the items that should be classed as "Miscellaneous" are receivers' certificates and demand or short-time notes issued by proprietary companies, which do not come within the character of obligations classed as funded debt.

3. Securities Issued or Assumed—Pledged.

This account should include the book value of securities issued by the respondent company, and securities issued by other companies, payment having been assumed by the respondent company, which have been pledged as collateral for other securities issued by the respondent company.

The par value of securities reported under this caption should be included in the amount of capital stock or funded debt of the respondent company

under general account "Stock" or "Mortgage, Bonded, and Secured Debt."

Amounts reported under this caption should be classified under the subheadings: (a) Stocks, (b) Funded Debt, (c) Miscellaneous.

See text of account No. 25, "Capital Stock," and No. 29, "Funded Debt," for description of items classed under subheadings (a) Stocks and (b) Funded Debt. Under subheading (c) Miscellaneous should be grouped the balances representing issued or assumed obligations (other than stocks, bonds, or certificates of indebtedness maturing more than one year after date of issue) which are owned by the respondent company and pledged by it as collateral security.

NOTE.—This account is not intended to cover securities guaranteed only.

4. Securities of Proprietary, Affiliated, and Controlled Companies—Unpledged.

This account should include the book value of unpledged securities of proprietary, affiliated, or controlled companies whose property is used by or forms a part of the railway system of the respondent company, the securities being held for the purpose of preserving the integrity of the system. There should be included under this caption the book value of investments in the securities of union depot, terminal, bridge, ferry, and similar companies when the property of those companies is used by the respondent company in the transaction of its own transportation business and said securities are in its treasury unpledged.

Amounts reported in this account should be classified under the subheadings: (a) Stocks, (b) Funded Debt, (c) Miscellaneous.

See text of account No. 2 for description of items classed as Miscellaneous.

NOTE.—This account is not intended to cover securities guaranteed only, or any deemed by the respondent company as "Marketable Securities."

III. Investments.

5. Advances to Proprietary, Affiliated, and Controlled Companies for Construction, Equipment, and Betterments.

Except as provided below, there should be included in this account all cash advances made to proprietary, affiliated, and controlled companies to enable said companies to pay for construction, equipment, and additions and betterments, which advances may be carried in open accounts by the respondent company. When the companies to which said advances are made issue notes or other securities to the respondent company for the payment of said advances, the cost of said notes or securities should be transferred from this account to account No. 2, if said securities are pledged as collateral for obligations issued, or to be issued, by the respondent company, or to account No. 4 if held unpledged.

In case advances are made to proprietary, affiliated, or controlled companies for the purposes above mentioned, with the understanding and intention that the advances shall be liquidated by the company to which made, either in cash realized from the issuance and sale of its own securities, or by the issuance of securities to the respondent company, which the latter may sell or hold in its treasury as free assets at its pleasure, the amounts so advanced should be included in account No. 15, "Advances."

6. Other Permanent Investments.

(a) Physical Property.—This account should include investments in property not used for railway purposes or outside operations, such as coal and other

mines, timber lands, sawmills, hotels (not a part of the railway property) with their furniture and fittings, buildings and property used for commercial purposes; land scrip acquired for the purpose of locating upon and securing title to public lands; investments in property not used for railway purposes and for which no titles or securities for titles are held; and other property that has been acquired in anticipation of future necessity or use, but which is not at present a part of the carrier's property used in carrying on its transportation business or outside operations.

(b) Securities—This account should include investments in the securities of steamship lines, express companies, or other enterprises which it is necessary or desirable for the respondent company to control or to be interested in for the purpose of maintaining the integrity of its transportation system, provided such securities be not considered "Marketable Securities" (account No. 8). This account should also include securities, not provided for in accounts Nos. 2, 3, and 4, and may be pledged in connection with mortgage, bonded, and secured debt (see accounts Nos. 29 and 33); also memberships in boards of trade and other commercial organizations when such memberships have a permanent value.

Working Assets.

7. Cash.

This account should include current funds in the hands of financial officers and agents, deposits in banks or trust companies available for use on demand, including deposits to pay declared dividends or matured coupons, and cash in transit for which agents and conductors receive current credit.

8. Marketable Securities.

This account should include the cost or book value

of all securities which are held in the company's treasury unpledged and free for sale and which it is not necessary or desirable for the respondent company to hold for the purpose of maintaining the integrity of its railway system. Such securities should be subdivided to show:

A. Securities held in the treasury of the respondent company, whether securities of its own issue or securities the payment of which it has assumed.

B. Other securities.

These securities should be further classified as stocks, funded debt, and miscellaneous.

NOTE.—The par value of securities entered under A should be included under accounts Nos. 25 and 29, "Capital Stock" and "Funded Debt."

9. Loans and Bills Receivable.

This account should include the book value of all collectible obligations in the form of loans and bills receivable or other similar evidences of money receivable on demand or within a time not exceeding one year.

NOTE.—This does not include time loans which mature more than one year after date of issue, considered as investments, or loans to proprietary, affiliated, or controlled companies, such as are described under accounts Nos. 5 and 15*a*.

10. Net Traffic, Car Mileage, and Per Diem Balance.

This account should include the net amounts due from other companies on account of interline freight and ticket balances and balances resulting from the interchange of cars on a per diem or a mileage basis. Amounts due to the owners of private cars for per diem or mileage on cars should be considered the same as amounts due to other railway companies.

11. Net Balance Due from Agents and Conductors.

This account should include the net balance due in current accounts from agents, and train, sleeping-car, and dining-car conductors, train auditors, porters, and others. Amounts advanced to general and

special agents as working funds should not be included.

12. Miscellaneous Accounts Receivable.

This account should include amounts due for audited accounts, such as those due from the United States or other governments for transportation of mails and government property, and from express companies for express facilities furnished under contract; miscellaneous bills against other railway companies, corporations, firms, and individuals; ground rents collectible; interest collectible on bills and accounts receivable, and on mortgages, deposits, and securities; and other similar items.

NOTE.—The amount to be reported under this account is not the net balance between accounts Nos. 12 and 37.

13. Materials and Supplies.

This account should include the balances representing the value of all unapplied material, and the value of material temporarily in use and not charged out, such as articles in process of manufacture by the company; telegraph and telephone material; fuel; stationery; dining-car supplies, etc.

14. Other Working Assets.

This account should include items of working assets not covered by accounts Nos. 7 to 13, inclusive. It is intended to include asset items that have not reached the stage of audited accounts properly classed under account No. 12, "Miscellaneous Accounts Receivable," and yet have been advanced beyond the stage of accounts properly classed under account No. 23, "Items in Suspense." This account includes such items as fines imposed by postal authorities in process of collection from parties at fault; amounts due from other roads for mileage or tickets honored for which reports or accounts have not been rendered or received; advanced charges billed out

on waybills not reported received at the end of the month, and similar items.

Deferred Debit Items.

15. Advances.

(a) Advances to Proprietary, Affiliated, and Controlled Companies.—This account should include amounts advanced to proprietary and subsidiary companies for purposes other than construction, purchase of equipment, or additions and betterments, as provided for in account No. 5. It should include advances on open account for the purpose of paying interest on the funded debt of proprietary or subsidiary companies, deficits resulting from the operations of such companies, and other advances not to be included in capital account and not represented by the physical property of said proprietary or subsidiary companies.

There should also be included in this subdivision amounts advanced to proprietary, affiliated, or controlled companies to enable such companies to pay construction, equipment, and additions and betterments expenditures when it is the understanding or intention that the advances shall be liquidated by the company to which made, either in cash realized from the issuance and sale of its securities, or by the issuance of its securities to the company making the advances, which securities the latter company may sell or hold in its treasury as free assets at its pleasure, it being considered not necessary that the company receiving said securities shall hold them for the purpose of maintaining the integrity of its railway system. (See accounts Nos. 2, 3, and 4).

(b) Working Funds.—This account should include amounts advanced to general and special agents, officers and employes of the engineering department, and other officers and employes as work-

ing funds from which certain expenditures are to be made and accounted for by the persons to whom the advances are made. It also includes advances to fast freight lines and union depot and other terminal companies as working funds to be used in paying the current expenses of such companies in advance of regular monthly settlements.

(c) Other Advances.—This account should include other advances not properly classified under (a) and (b) above or under account No. 5, "Advances to Proprietary, Affiliated, and Controlled Companies for Construction, Equipment, and Betterments."

16. Insurance Premiums Paid in Advance.

This account should include the debit balances representing premiums paid in advance for fire, boiler, accident, plate glass, liability, and kindred insurance, to be absorbed by monthly charges to operating expenses and outside operations during the term of the insurance.

17. Taxes Paid in Advance.

This account should include the excess of taxes paid over the proportion accrued against the income of the period covered.

18. Discount on Securities Issued.

(a) Discount on Stock.—When stocks, included under account No. 25 at their par value, are issued or sold at a discount, the discount should be reported in this account and, if the stock is not to be retired or converted, carried on the balance sheet permanently or until extinguished by premiums realized on subsequent sales of the same class of stock. If the stock is to be retired or converted, the discount should be charged to Profit and Loss or against the premium realized, if any, at the date of such retirement or conversion.

If the premium in account No. 28, "Premium

Realized on Capital Stock Sold," is less in amount than the discount included in this account, it should be deducted herefrom and the net amount included in this account. If the premium in account No. 28 is greater than the discount charged in this account, the discount should be deducted therefrom and the difference included in account No. 28.

(b) Discount on Funded Debt.—When bonds are issued or sold at a discount they should be included in account No. 29, "Funded Debt," at their par value. The discount should be charged to Income in such equal annual installments during the life of the bonds as will extinguish the discount. The carrier may, however, at its option, charge to Profit and Loss all of the discount or any part of it remaining at any time unextinguished; but the charge to Income in any one year must not exceed the amount of the annual installment applicable to that year. The discount remaining unextinguished should be included in this account.

If the premium in account No. 31, "Premium Realized on Funded Debt Sold," is less in amount than the discount included in this account, it should be deducted herefrom and the net amount reported in this account. If the premium in account No. 31 is greater than the discount charged in this account, the discount should be deducted from the premium and the difference included in account No. 31.

19. Property Abandoned, Chargeable to Operating Expenses.

This account is intended as a suspense account to which may be charged certain costs representing important pieces of property abandoned in the course of improvement or betterment work when the cost of such property would, if included in the operating expenses for a single year, unduly burden such ac-

counts for that year. It is to be used only after permission of the Interstate Commerce Commission has been asked and given and is not to be applied to lands abandoned or equipment retired from service. Amounts included herein are to be redistributed to operating expenses through a period of years, the number of which will be determined when permission to use the account is granted.

To this account may be charged the cost, less salvage, of replacing in kind any of the following property: Station buildings, enginehouses, turntables, shop buildings, and terminal yards, including buildings and other structures therein, removed or abandoned in the course of replacing them with improved structures or facilities; bridges and trestles abandoned by reason of replacing them with structures of greater capacity or permanency; interlocking apparatus abandoned in the course of eliminating grade crossings or of other improvements; block and other signal apparatus replaced with improved apparatus; and fuel stations, grain elevators, storage warehouses, docks, wharves, light and power plants, and all other important miscellaneous structures abandoned in the course of replacing them with enlarged or improved property.

To this account may also be charged the cost, less salvage, of main line and sidings, including track material abandoned by reason of change of line or location; and the cost, less salvage, of rails, track fastenings, and frogs and switches released from track on account of relaying with heavier rails. For the purposes of this account the cost of replacing rails, track fastenings, and frogs and switches should be computed upon the basis of the cost of replacing the original weight of the rails, track fastenings,

and frogs and switches, at the price per ton paid for the material put in anew.

This account may also include the cost of removing old material and all other incidental expenses directly connected with the abandonment of property the cost of which is included in this account.

NOTE A.—The amount charged to this account for property abandoned should be concurrently credited to the appropriate accounts under Additions and Betterments.

NOTE B.—The phrase "unduly burden such accounts," used above, should not be interpreted as meaning that a carrier is at liberty to make charges for abandoned property directly to Operating Expenses, or to Operating Expenses through the account "Property Abandoned, Chargeable to Operating Expenses," in view of its financial ability to make such charges directly in one year and its inability to make such charges in another year. It should be remembered that the charges included in Operating Expenses are designed to cover the current cost of maintaining and operating the property, and that the Property Abandoned accounts are designed to cover any unusual expenditures from year to year.

20. Cash and Securities in Sinking and Redemption Funds.

This account should include the amount of cash and the cost or book value of live securities in the hands of trustees of sinking and other funds for the purpose of redeeming outstanding obligations. Any live securities of the respondent company held by such trustees should be included in the amounts reported under the appropriate subheadings of account No. 25, "Capital Stock," or account No. 29, "Funded Debt."

21. Cash and Securities in Insurance and Other Special Funds.

This account should include the ledger balances covering the amount of cash and the cost of securities in the hands of trustees or managers of insurance funds, pension funds, and other funds that have been raised by the carrier for specific purposes (except special trust funds and sinking funds for the retirement of obligations). The amount reported in this

account should agree with the amount reported in account No. 47b, "Reserves Invested in Other Special Funds."

22. Cash and Securities in Special Trust Funds.

This account should include the ledger balances covering the amount of cash and the cost of securities in the hands of trustees or managers of employes' savings funds, relief, hospital, and other association funds when such trustees or managers are acting for the carrier in the administration of such funds. If such funds are held in the carrier's treasury not invested and unidentified they should be included in account No. 7, "Cash." The amount reported in this account should agree with the amount reported in account No. 45, "Liability on Account of Special Trust Funds."

23. Items in Suspense.

In this account should be included suspense accounts showing debit balances that cannot be entirely cleared and disposed of until additional information is received, such as freight claims paid when found to be correct but in advance of investigation with other carriers; charges for work done or materials furnished for which bills have not been received from the proper departments; items awaiting adjustment between accounts, such as cost of work done in advance of receipt of proper authority or appropriation; accounts covering the cost of operation of gravel pits and quarries to be apportioned on output; debit balances in "Shop Expense" and "Store Expense" accounts; also accounts to be spread over a stated term not provided for in account No. 18 or elsewhere; and debit balances in operating reserve accounts to be cleared by future charges to operating expenses.

Deficit.

24. Profit and Loss—Balance.

In case the debit balance in the profit and loss account is less than the total of accounts Nos. 47 and 48, under the caption "Appropriated Surplus," the amounts of these accounts should be stated in short column on the credit side of the balance sheet and the total brought down. From this total should be deducted the profit and loss debit balance and the net amount remaining should be extended as "Profit and Loss—Balance" under "Free Surplus." If, however, the debit balance of the profit and loss account is in excess of the total of accounts Nos. 47 and 48 the amount of these accounts should be stated in short column on the debit side of the balance sheet and the total deducted from the profit and loss debit balance, the difference being shown as "Profit and Loss—Balance" under "Deficit."

Liabilities.

Stock.

25. Capital Stock.

In this account should be entered the full amount of the capital stock issued and outstanding, whether all or any part of same is held by the public, by other railway companies, in the company's treasury, pledged or unpledged, or by the trustees of sinking or other funds for the redemption of outstanding obligations, or for other special purposes. The amounts entered in this account should be subdivided as follows:

(a) Common Stock.—The par value of common stock issued and outstanding.

(b) Preferred Stock.—The par value of first, second, or other preferred stock issued and outstanding.

(c) Debenture Stock.—The par value of debenture stock issued and outstanding.

NOTE.—Capital stock is considered as "issued" when certificates are signed, sealed, and placed with the proper officer for sale and delivery. All capital stock issued and not canceled is considered to be "outstanding."

26. Receipts Outstanding for Capital Stock.

When capital stock is sold, to be paid for in installments, the amounts received in such installments should be included in this account. When such stock has been paid for in full, and the receipts given for the installments paid are surrendered in exchange for regular stock certificates, the par value should be included under the appropriate subdivision of account No. 25, "Capital Stock." The premium, if any, realized on such capital stock should be disposed of as provided in the text of account No. 28, "Premium Realized on Capital Stock Sold," while the discount, if any, should be disposed of as provided in the text of account No. 18a, "Discount on Stock."

27. Stock Liability for Conversion of Outstanding Securities of Constituent Companies.

This account should include the company's liability under agreements to exchange its capital stock for the outstanding securities of constituent companies whose physical property has been acquired under such agreements, but whose securities have not yet been surrendered for exchange.

28. Premium Realized on Capital Stock Sold.

When stocks, included in account No. 25, "Capital Stock," at their par value, are issued or sold at a premium, the premium realized should be reported in this account and, if the stock is not to be retired or converted, carried on the balance sheet permanently or until extinguished by discounts on subsequent sales of the same class of stock. If the stock

is to be retired or converted, the premium should be either credited to Profit and Loss or against the discount, if any, suffered at the date of such retirement or conversion.

If the discount in account No. 18a, "Discount on Stock," is less in amount than the premium included in this account, it should be deducted herefrom and the net amount included in this account. If the discount in account No. 18a is greater than the premium credited in this account, the premium should be deducted therefrom and the difference included in account No. 18a.

Mortgage, Bonded, and Secured Debt.

29. Funded Debt.

There should be entered in this account the full amount of funded debt issued by the respondent company and outstanding, or issued by other companies and outstanding when the payment of such securities has been assumed by the respondent company, whether all or any portion of said funded debt is held by the public, by other railway companies, in the company's treasury, pledged or unpledged, held uncanceled by the trustees of sinking funds to retire outstanding obligations issued or assumed by the respondent company, or held by the trustees of any other special funds created for the benefit of the respondent company.

The amounts included in this account should be subdivided as follows:

(a) Mortgage Bonds.—Bonds secured by a lien on the property of the company, except as provided in the other subdivisions of this account.

(b) Collateral Trust Bonds.—Bonds secured by lien on securities or other commercial paper. Stock trust certificates that are similar in character to collateral trust bonds should be included under this

heading, as should also short-time collateral trust notes.

(c) Plain Bonds, Debentures, and Notes.—Unsecured certificates of indebtedness. Short-time notes (having a life of one year or less) given in payment of temporary indebtedness should not be included under this heading. Short-time notes secured by collateral should be classed with collateral trust bonds. Debentures should be clearly distinguished from debenture stock.

(d) Income Bonds.—Bonds which are a lien on a carrier's revenue alone, or bonds which, while being a lien on its road and franchises, can claim payment of interest only in case interest is earned.

(e) Equipment Trust Obligations.—Equipment bonds, equipment notes, or car trust notes secured by a lien on specific equipment, such lien having been created in connection with the acquisition of the equipment securing the obligation.

(f) Miscellaneous Funded Obligations.—All other funded obligations not provided for by the other subdivisions of this account, including real-estate mortgages executed or assumed by a carrier, and other similar obligations.

NOTE A.—Bonds are considered "issued" when they are certified by trustees and placed with the proper officer for sale and delivery. "Outstanding bonds" include all bonds issued and not canceled.

NOTE B.—This account is not intended to cover securities when the payment of either principal or interest has been guaranteed only.

30. Receipts Outstanding for Funded Debt.

When funded debt is sold, to be paid for in installments, the amounts received in such installments should be included in this account. Upon final payment of purchase price and the surrender of receipts given for the installments paid in exchange for the regular securities, the par value of the funded debt

so issued should be transferred to the proper subdivision of account No. 29, "Funded Debt." The premium realized, if any, should be disposed of as provided in the text of account No. 31, "Premium Realized on Funded Debt Sold," while the discount, if any, should be disposed of as provided in the text of account No. 18b, "Discount on Funded Debt."

31. Premium Realized on Funded Debt Sold.

When bonds are issued or sold at a premium, they should be included under account No. 29, "Funded Debt," at their par value. The premium should be credited to Income in such equal annual installments during the life of the bond as will extinguish the premium. A carrier may, however, at its option, credit to Profit and Loss such premium or any part of it at any time unextinguished; but the credit to Income in any one year must not exceed the amount of the annual installment applicable to that period. The premium remaining unextinguished should be reported in this account.

If the discount in account No. 18b, "Discount on Funded Debt," is less in amount than the premium included in this account, it should be deducted herefrom and the net amount included in this account. If the discount in account No. 18b is greater than the premium credited in this account, the premium should be deducted from the discount and the difference included in account No. 18b.

32. Receivers' Certificates.

This account should include the par value of outstanding certificates, notes, or other obligations issued by receivers in charge of and operating the property of a carrier, and the par value of certificates, notes, or other obligations issued by receivers and assumed upon reorganization.

33. Obligations for Advances Received for Construction, Equipment, and Betterments.

Proprietary, affiliated, and controlled companies should show in this account the amounts advanced to them for construction, equipment, and additions and betterments expenditures. These amounts, if advanced by another carrier, should be reported by it in account No. 5, "Advances to Proprietary, Affiliated, and Controlled Companies for Construction, Equipment, and Betterments."

Working Liabilities.

34. Loans and Bills Payable.

This account should include the balances representing obligations outstanding in the form of loans and bills payable or other similar evidences of money borrowed, payable on demand or within a time not exceeding one year, which are not properly classed under account No. 29, "Funded Debt."

35. Net Traffic, Car Mileage, and Per Diem Balance.

This account should include the net amounts due to other companies on account of interline freight and ticket balances and balances resulting from interchange of cars on a per diem or a mileage basis. Amounts due to the owners of private cars for per diem or mileage on cars should be considered the same as amounts due to other railway companies.

36. Audited Vouchers and Wages Unpaid.

This account should include the amount of audited vouchers or accounts and audited pay-rolls unpaid on the date of the balance sheet. It should include unclaimed wages and outstanding pay and time or discharge checks issued in payment of wages.

37. Miscellaneous Accounts Payable.

There should be included in this account unpaid and outstanding drafts drawn by station agents, unpaid and outstanding drafts drawn on the company

in settlement of freight claims, conductors' rebate and extra-fare checks not presented for redemption, meal checks and tickets outstanding, deposits of controlled companies, and other items of the nature of demand liabilities not covered by accounts Nos. 34, 35, 36, 38, and 39.

NOTE.—The amount to be reported under this account is not the net balance between accounts Nos. 12 and 37.

38. Matured Dividends, Interest, and Rents Unpaid.

This account should include the amount of dividends payable on capital stock and unpaid, uncalled for, or unclaimed at the date of the balance sheet, including dividends payable on the first day of the month following that for which the balance sheet is made; the amount of matured and unpaid interest on the funded debt of the respondent company, and of other companies when payment has been assumed by the respondent company, including interest which matures on the first day of the month following that for which the balance sheet is made; unpaid dividends on the stock and unpaid interest on the funded debt of other companies when same are payable by the respondent company as all or a portion of the rent due under leases; and all other rents due under leases which have become payable.

39. Matured Mortgage, Bonded, and Secured Debt Unpaid.

This account should include the amount of matured mortgage, bonded, and secured debt payable but not yet paid, including bonds drawn for redemption through the operation of sinking and redemption fund agreements. Obligations which mature on the first day of the month following that for which the balance sheet is made should be included in this account.

40. Working Advances Due to Other Companies.

Proprietary, affiliated, and controlled companies should include in this account the amounts advanced to them for general purposes, such as advances to pay interest on their funded debt not included in account No. 33, "Obligations for Advances Received for Construction, Equipment, and Betterments," deficits resulting from their operation, and advances for construction, equipment, and additions and betterments, when such advances are made under the conditions stated in account No. 15a, "Advances to Proprietary, Affiliated, and Controlled Companies," and when that account is used to report the advances by the company making them.

41. Other Working Liabilities.

This account should include items of working liabilities not covered by accounts Nos. 34 to 40, inclusive. It should include liability items that have not reached the stage of audited liabilities and become actually payable, yet are obligations of the company and advanced beyond the stage of accounts properly classed under account No. 46, "Items in Suspense," such as retained percentages due contractors to be paid on completion of contracts; deposits for construction of side tracks, to be refunded on the basis of an agreed percentage of the earnings from the traffic handled over the tracks; prepaid charges billed out on waybills not taken into the month's accounts; and other similar items. It should include also balances to the credit of employes' savings funds, and relief, hospital, and other association funds when such funds are held unidentified in the carrier's treasury and are included in account No. 7, "Cash."

Accrued Liabilities Not Due.

42. Dividends Declared and Interest and Rents Accrued, Not Due.

This account should include the amount of dividends on capital stock, interest on funded debt, including interest on funded debt assumed, and rents under leases, accrued to the date for which the balance sheet is made but not payable until after the first day of the following month. There should be included also as "rents accrued" the amount of accrued dividends on the stock and accrued interest on the funded debt of other companies when such dividends and interest are paid as all or a portion of the rent under leases from those companies.

43. Taxes Accrued.

This account should include the amount of taxes accrued and charged against income in excess of the amount paid. When the respondent company leases the property of another company and, under the terms of the lease, agrees to pay or assume the taxes that may be levied upon or assessed against such property, the taxes accrued on such property should be included in this account and not in account No. 42. When, however, the taxes are paid by the lessor company, the full amount of cash rent to be paid by the lessee should be included in account No. 42.

Deferred Credit Items.

44. Operating Reserves.

This account should include the ledger balances in the reserves created to cover past depreciation of property; reserves created since July 1, 1907, by charges to Operating Expenses to cover accrued depreciation of equipment and of way and structures when a plan for such purpose has been adopted by the carrier; reserves created by charges to Operating Revenues or to Operating Expenses to provide for overcharge, personal injury, insurance, and other claims; and similar reserves. The credits in this account should be subdivided as follows:

(a) Reserves for Replacement of Property.

(b) Reserves for Other Purposes.

The credit balance in sinking fund reserve account should not be included in this account. See account No. 47a, "Reserves Invested in Sinking and Redemption Funds."

45. Liability on Account of Special Trust Funds.

This account should include the ledger balances covering the amount of cash and the cost of securities in the hands of trustees or managers of employes' savings funds, relief, hospital, and other association funds, when such trustees or managers are acting for the carrier in the administration of such funds. The amount reported in this account should agree with the amount reported in account No. 22, "Cash and Securities in Special Trust Funds."

46. Items in Suspense.

Under this caption should be included suspense accounts showing credit balances that cannot be entirely cleared and disposed of until additional information is received, such as collections by general agents and others to cover prepayment of shipments originating on lines of other carriers; amounts realized from sale of damaged, unclaimed, and over freight and held pending claim; switching charges of other carriers collected and held awaiting bills from such carriers; amounts received from sale of mileage tickets to be disposed of as mileage is honored by the respondent or other carriers; amounts collected for milling-in-transit privileges, to be cleared when products are shipped; credit balances in "Shop Expense" and "Store Expense" accounts; and other similar items.

Appropriated Surplus.

47. Surplus Reserves.

In this account should be grouped all appropria-

tions of surplus (except as covered by account No. 48), including unexpended balances of appropriations for additions and betterments. The account should be subdivided under the following heads:

(a) Reserves Invested in Sinking and Redemption Funds.

Amounts charged against Income Account for sinking fund payments; accretions to sinking funds in the hands of trustees; also amounts realized and turned over to sinking fund trustees or used in the purchase of outstanding obligations either by sinking fund trustees or by the respondent company, when such sums are realized from other sources than the company's income. All credits to this account to cover amounts turned over to sinking fund trusttees, and all accretions to sinking funds collected by trustees, should be debited to the account with such trustees in account No. 20.

(b) Reserves Invested in Other Special Funds.

(c) Reserves Not Specifically Invested.

48. Additions to Property through Income since June 30, 1907.

This account should include the cost of property acquired by expenditures of appropriations from Income since June 30, 1907, whether such expenditures are for new lines or for additions and betterments to existing lines. The amount standing to the credit of this account should be included in the amount reported under account No. 1-B, "Road and Equipment since June 30, 1907."

Free Surplus.

49. Profit and Loss—Balance.

This account should include the balance, if any, standing to the credit of the profit and loss account.

When there is a debit balance in the profit and loss account, but such balance does not exceed the

total credit balance of accounts Nos. 47 and 48, the latter are to be stated in short column, the total brought down, and the debit balance of account No. 49 deducted therefrom, the difference being extended to the total column as the net appropriated surplus. When the debit balance standing in account No. 49 exceeds the total credit balance of accounts Nos. 47 and 48, the accounts are to be stated as prescribed in the text of account No. 24.

SECTION G.

THE ACCOUNTS OF A TELEPHONE COMPANY.*

I. Objects of Accounting Scheme.

A suitable scheme of accounting for the Bell Telephone System must attain these objects.

1. It must be uniform in its essential and fundamental features so that the results of the business can be compared and combined.
2. It must be elastic in details so as to furnish at the one extreme the simple information needed with respect to the numerous small exchanges and at the other extreme the great and complicated variety of information needed with respect to a large city system with every degree of greater or less detail for the conditions between these extremes.
3. It must be sound in principle so as to meet the most rigid scrutiny of investors and public authorities.
4. It must conform to organization so as to associate the strong and weak spots with the individuals responsible for them.
5. It must be practicable in application, speedy in operation and dependable in results.

II. Limitations.

A bare statement of these objects to be obtained suggests at once not merely the difficulties to be expected in constructing such a scheme of accounts but also certain natural limitations which must be respected or the scheme will fall of its own weight. A brief reference to some of these limitations may assist in the general understanding of the work as a whole.

1. A scheme of accounts is a distribution of the financial

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transactions of the business into classes, and attempts to define those classes. Now, figures, whether accurate or inaccurate, are from their nature precise. They do not qualify themselves nor express shades of meaning. Language on the other hand as commonly used is not very exact. Words that are equivalent in one connection express shades of meaning or even different meanings when used in another connection. Even technical accounting terms have not yet come to have exact and authoritative meanings and even though accounting terms be arbitrarily defined for our use, the definitions of classes of transactions must further be expressed in words and phrases which can be understood, not only by telephone men but generally by men accustomed to considering any business transactions.

It follows that definitions, whether in general or technical language, will not always convey exactly the same meanings to all the people who may use them.

Every financial transaction has to go through the books and its classification has to be decided. Such transactions, as do not clearly fall under some one definition, have therefore to be specially adjudicated.

An accounting scheme, as laid down in our accounting circular, forms only the nucleus or foundation around which must be gathered interpretations and decisions on many specific cases, which decisions come in time to be a part of the accounting scheme.

2. Changes in operating conditions increase the difficulty of uniformity. Sometimes, for instance, it appears more important to make the accounting for a certain kind of transactions conform to the organization than to have it uniform in different organizations, though in general I believe uniformity is the paramount object to be sought.
3. Comparisons of present periods with previous periods are important as a guide to the changes in results which

are taking place, but too rigid adherence to this principle would mean that the accounting could not be developed to keep pace with the business.

4. The indirect relations of things, which as already suggested can only be imperfectly expressed in figures, are always likely to be under-estimated or misinterpreted from a superficial study of financial reports, and this is particularly true of figures for geographical areas, in the telephone business where every local area is connected with every other.

5. In taking up one after another the various transactions in the telephone business, it may seem as if each one were sufficiently important to warrant its inclusion in the accounting system, but when these are all listed it will appear that the variety of information is too great for any one administrative officer to consider and understand from month to month, or that if he does so he thereby loses a grasp on the results as a whole.

   While the true remedy for this lies largely in the perfection of organization with a view to pushing information and authority further and further down the line, yet the elaboration of accounts on such lines can only gradually be justified as this administrative process goes gradually on.

6. Other limitations relate to the mechanics of bookkeeping and the limited clerical facility of people in the field dealing with the primary transactions. I hold that a very high degree of clerical accuracy can be attained in the field without difficulty or increased expense, provided the classes of transactions with which any one employe deals are few in number and are defined in the language to which he is accustomed. This is none the less a real limitation to the logical development of accounts.

III. Method of Constructing Scheme of Accounts.

All of this means of course that we have had to deal with the problem without forgetting on the one hand the objects to be attained, and on the other the dangers to be avoided and the limitations to be respected.

There was a respectable amount of information to serve as a guide in constructing our scheme of accounts. In the first place we had the present scheme of accounts generally followed by the Telephone Companies. This represents a gradual development of such accounts as were shown by experience to be particularly useful. It has few, if any, faults that could be called fundamental. The chief criticism has been that it lacked adaptation to administrative purposes. The natural course then was to get the consensus of opinion of telephone men generally as to the revision and amplification of the present scheme. For this purpose the advice of Engineers, Accountants and Plant, Traffic, Commercial and Administrative Officers in all parts of the country was sought on the various phases of the work with which they were most familiar. Conferences were held and reports, suggestions and data were gathered. The work along similar lines attempted by other public service corporations was reviewed and in this connection the comprehensive and admirable scheme of railway accounts established by the Interstate Commerce Commission was found particularly useful. At the same time the various text-books on accounts particularly those relating to modern accounting principles and practice were consulted. After all this preliminary work a first draft of our proposed scheme was prepared and submitted generally to Bell Telephone Officials throughout the country for comment and criticism. As these comments and criticisms were received they were sifted and discussed, as a result of which the scheme was several times revised and

finally the last revision was issued as Accounting Circular No. 6.

IV. Scope of Accounting Circular No. 6.

This circular brings together in one publication our present judgment as to the accounts needed by a telephone company with the definitions of those accounts.

It may be readily adapted to the use of small sub-licensees and connecting companies by using generally the main accounts (which are printed in black faced type) perhaps substituting for Commercial and Traffic Expenses and to some extent for General Expenses the corresponding sub-accounts given under the clearing account Non-Functional Exchange Expenses. This would depend on the organization of the company in question.

The sub-accounts, many of which are optional, give the information needed by larger companies of various sizes and conditions up to the largest and most complicated, while still more detailed information may be obtained by the use of any additional sub-accounts that may be desired for special needs.

An important feature of the scheme is the code numbers provided for all accounts and the method provided for getting statistical information by divisions, districts or even exchanges should it be desired. The extent to which this is to be carried is simply a question of the expense of the clerical work compared with the value of the information at any time or place.

In the following discussion of the accounts I shall so far as possible, even at the risk of some crudeness, endeavor to avoid the use of technical accounting language or when using such expressions, will try to explain them as I go along.

Any scheme of accounts must deal with four main groups, viz.:—the Assets, the Liabilities, the Revenue and the Expenses.

By **assets** at any date we mean generally the property existing at that date.

By **liabilities** at any date we mean generally the debts owing at that date including the company's obligations to its stockholders for their respective shares in the business.

By **revenue** for any period we mean generally what the company has received or is entitled to receive for its services during that period.

By **expenses** for any period we mean generally the cost to the company of conducting its business for that period.

The asset or property accounts and the expenses always appear as debit or charge accounts on the books.

The liabilities and the earnings always appear as credit accounts on the books.

The distinction between assets and expenses (both being debit accounts) though easy to define is not always easy to maintain in practice. It is of vital consequence however since the net results of the business for any period cannot otherwise be known and the attention of accountants is largely directed to safeguarding this point. The familiar form which confusion on this distinction takes is reflected in the expression "Construction has been charged items that ought to have gone to Maintenance" or vice versa.

V. Plant.

The preponderant property of an operating telephone company is of course that known as Plant or Construction.

1. Value at which Property is Carried.

Before taking up the various classes of Plant it is worth while to consider the proper basis for the figures carried on the books to represent the value of this and other property.

It may be said that theoretically property accounts

should show what it would cost to replace the property with equivalent new property and that against this should be carried contra or liability accounts for the deterioration that has taken place, the difference between the two accurately representing the present value of the property. In practice this is not feasible nor altogether desirable; first, because to determine it would call for frequent inventories the expense of which as respects plant would be prohibitive; second, the deterioration that has taken place is, as anyone can readily see, impossible of any accurate determination; and third, it is advantageous to know currently what plant has cost rather than what it would now cost. The practical procedure is to exercise great care in making additions to plant accounts at the true cost of such additions, verifying this by inventory at intervals of several years. On the other hand provision should be made out of earnings to represent depreciation as it takes place as nearly as this can be estimated, this provision being set aside or reserved to be used for future replacement. An estimate of depreciation is properly based on the probable life of different classes of plant, allowing for the net value of the salvage expected to be recovered. Unfortunately the data on which such estimates can be based is still incomplete, chiefly because some classes of plant of the general character now in use have not yet shown in experience their probable age limits.

The study of depreciation is of itself almost a life work and one of the most profound importance, for whether a telephone company is making or losing money may depend solely on the rate of depreciation. Our scheme of accounts is now arranged so as to provide accurate statistics as to what plant is actually being built and replaced, so that in a few years we shall have valuable data on the various doubtful points. In the

meantime we aim to follow the best information we now have or can get as reflected in the opinions of those who have had most experience with the subject.

The true cost of additions to plant is somewhat difficult to ascertain because the construction of new and the removal of old plant are continuous processes to which nearly every department lends a hand, but we are satisfied that reasonable accuracy can be attained by the methods provided.

2. General Classes of Plant.

The Bell Companies have for many years followed the practice of building their own plants and of classifying them so as to show the cost of the different classes. In Accounting Circular No. 6 we retain the classes that have come to have a definite meaning to many people both in and out of the business but we now group these classes somewhat differently than heretofore.

After considering the subject from various standpoints it seems to us that there are four general classes of plant—

Real Estate,
Equipment,
Exchange Lines,
Toll Lines.

3. Real Estate.

Real Estate is easily distinguished from other plant, it usually has a separate taxation status, it is the basis for computing rent charges, and it seems for these reasons desirable to keep it in a separate account.

4. Equipment.

Equipment is distinguished from Exchange Lines and Toll Lines because of its character as reflected in the common expressions "inside plant" and "outside plant."

Under Equipment there are two great classes:—Central Offices and Subscribers' Stations, between which

there is an important distinction not only in location but in permanence of location.

The station appartus is constantly moving from one place to another. This constitutes a heavy burden on the telephone business, but it is one of the things that makes the service valuable. It is worth something to every telephone patron to know that when he or other patrons move from one residence or office to another their telephone service is not discontinued. The constant shifting of industry and residence and the tearing down and rebuilding going on in our cities is frequently remarked but the public is so habituated to the convenience of having terminal telephones immediately provided to keep up with this shifting that its value is seldom considered. But a little reflection shows its great value not only to the subscriber who moves but perhaps even more to all the subscribers who may want to communicate with him.

Roughly of every five stations in service at the beginning of a year one goes out of service during the year, or in other words the average period a station remains in service is about five years. Even this does not include moving the station from one location to another for the same subscriber nor changing the subscriber without moving the station. While this station shifting usually does not much affect the number connected to one exchange and so does not throw out of service much of the exchange lines or central office equipment it considerably affects the wires connecting the station to the exchange lines, commonly called drop wires or interior block wires which for this reason are included with subscribers' station equipment in the accounts.

The value and practicability of sub-accounts under central office equipment and subscribers' station equipment will vary with the conditions. All such sub-

accounts are therefore made optional but these optional sub-accounts, like others, point the way I think to the kinds of information that are more and more likely to be found useful. For instance in studying the expense caused by shifting of stations it will be of great assistance to know how much of that plant is the set (which is recovered) how much the cost of installation and inside wires (on which there is little recovery) and how much the cost of drop wires (on which the chances of recovery greatly vary though the recover if made is likely to be complete).

5. Outside Plant.

In considering the outside plant the most important distinction, that between Aerial and Underground, indicates the character and development of the plant, its degree of permanence, and has much significance when comparing original cost and cost of repair.

6. Distinctions Between Exchange and Toll Plant.

While this distinction and others have become commonly accepted as important in the business other distinctions once of great significance have, in some localities, lost some of their force.

For instance the distinction between exchange lines and toll lines in the complicated systems centering at the very large cities is difficult in practice, though in the country as a whole it possesses as great importance as ever.

The question is raised why it is worth while to continue this distinction between exchange and toll lines, since even though the lines can be divided, no practical accounting methods are known by which the entire central office equipment and subscribers' station equipment can be divided between exchange and toll. Without rehearsing the detail of the argument on both sides of this interesting question, it is worth while to indicate here the reasons for the conclusions reached.

In the first place, the distinction between exchange and toll business has been observed from the beginning and is still observed in making rates. Every rate scheme seems to be based, and soundly so, on the principle that the subscribers' station, the line from the station to the central office, the bulk of the central office equipment, and finally the trunks connecting central offices are built primarily for the purpose of transmitting local or exchange messages. Each line is thus mainly built and held ready for the subscriber's particular use. On all the plant just enumerated the subscriber undertakes for a stated period, usually one year, to pay for his exclusive service and a fair return on the investment held for his exclusive use. For a toll line however the subscriber commits himself to nothing. It is built entirely at the company's risk, and it is very difficult to forecast accurately what business can be expected for a new line, while the volume of business even on long established lines fluctuates considerably.

It seems wise therefore to know the revenue from such business and the cost of the lines that carry it, even though it is difficult in certain cases tc apply the distinctions and even though it is impossible to distinguish the expenses applying to the exchange and the toll service.

7. Reasons for Classifying Plant.

The reasons for classifying plant may be thus summarized:

(a) It is important to be able to analyze the investment in plant so as to help guard against including anything therein which should go to expense.

(b) The proper treatment of the station moves would be impracticable if station plant were not kept distinct.

(c) No one unit suffices for a comparison of one plant with another, because one plant may have more

underground lines or more toll lines than another.

(d) The analysis of certain expenses, for instance repairs, is incomplete without knowledge as to the cost of classes of plant.

(e) Depreciation can be estimated more closely if figured by classes instead of at an average rate for the whole.

(f) Any study of earnings and of rates, which are the basis of earnings, depends largely on the character of the plant.

(g) The character and cost of new plant are guided somewhat by experience with previous plant.

If these reasons are convincing the question naturally arises and has been asked why we do not sub-divide plant still further and so increase the advantages. The answers to this are, first, that the plant already built would have to be inventoried or appraised at once to the finer sub-divisions, and second, that clerical accuracy in the field becomes more difficult with every additional plant account. For these two reasons various proposals to extend the required plant classifications were rejected and only the classes heretofore used are to be required, but optional sub-accounts have been provided for most of the finer sub-divisions proposed.

8. Plant Measurements.

A subject deserving and constantly receiving more attention and interest may be briefly referred to here under the term Plant Unit Costs, by which we mean, for instance, the cost of station equipment per station, or of exchange underground plant per mile of wire, and so on. The importance of such information appears when we compare one company with another or study the effect of increasing wages and costs of material.

These studies lead us naturally to consider how the number of miles of wire, number of stations and so on

are being ascertained. At first thought one might say that there could hardly be two opinions as to what constitutes a mile of wire or a station. But on close analysis we find we must define the point at which a wire begins and ends, whether at the entrance to a building or at the instrument, whether wire mileage includes the drop wire or not, whether it includes any of the wiring in the distributing frames and so on. Again are P. B. X. operators' telephones and company service stations to be classed as stations and so on?

Again in attempting to define a mile of pole line and particularly to divide it between toll and exchange when it may carry some toll wires for long distances, varying numbers of exchange wires for varying distances and perhaps also a cable or two containing wires some of which may be toll one month and exchange the next, we have serious complications. . . . .

VI. Working Assets.

The next general class of property, which for want of a better name may be called Working Assets, comprises office furniture and fixtures, tools and vehicles and supplies.

It is important to distinguish these three classes not only so as to watch their increase more carefully but also because the expenses that relate to them take different courses.

It is better to carry the depreciation reserve for these working assets in offsetting accounts rather than as a deduction from the face of the account. The face value can be known with some degree of accuracy, while the net value is, like depreciation, a matter of estimate. In Supplies it is not practicable to take material returned from plant at its then estimated value and re-issue it at that value. The practical way is to take in material fit for re-issue or that can be made fit for re-issue at the cost of corresponding new material, but to prevent carrying such used material at more than its true value the reserve for depre-

ciation of supplies should be utilized. By the use of this account, offsetting to some extent the property account called Supplies, the used material can for accounting purposes be carried at its face value in the property account until its disposition or true value can be determined, and meanwhile the net assets not be overstated.

Each of these three classes of property under Working Assets has its corresponding expense account.

Furniture expense which comprises not only repairs and changes to furniture, but also depreciation on furniture and fixtures is a sub-account for each department. By the methods provided in a standard routine known as Accounting Bulletin 8 A the face value of all office furniture and fixtures used by any department or any district may be known periodically. The rate of depreciation having been determined, it is a simple matter to charge each department monthly the depreciation on its own office furniture and fixtures, while repairs or changes in such office furniture and fixtures may go to the different departments as incurred. It has seemed to some that this is an over-elaborate treatment of a minor account. I am satisfied that it will not prove to be so in practice, for this class of property is one on which it is difficult to preserve the truly economical course. Properly considered, furniture is a tool and it is important on the one hand to have this tool, like others, adapted to its purpose so as to get the greatest value out of the time of the man who uses it. On the other hand personal fancies and other influences that have no bearing on efficiency have to be carefully avoided. The same degree of efficient oversight should be given to furniture and fixtures as to tools and vehicles.

Repair shops which were formerly carried as a separate class of property are now made a sub-account of Supplies. This is for the reason that most of the important repairs and nearly all the local repair shops have in the last few years been turned over to the Western Electric

Company. In the few cases where repair shops are still run by the telephone companies, it is important to keep accounts on the lines commonly adopted by factories so as to make up correct costs of different repair jobs. Shop work and shop accounts are so different from the other work of a telephone company that effective supervision and information are apt to be lacking as compared with the standards to which factory men are accustomed.

VII. Current Assets.

The next general class of property is comprised under the term Current Assets, because it is either cash or is to be converted into cash in the ordinary course of business.

The account Cash and Deposits needs no explanation.

Bills Receivable represent debts due the company for which promissory notes are held, such notes being usually on demand or for short terms.

Accounts Receivable likewise represents debts due the company, the bulk of which it expects to collect in the usual course, but for which it holds no acknowledgement of the debtor. It is important to distinguish here the accounts which for any reason have become doubtful of collection, and it is common business practice to anticipate in the bookkeeping the probable non-collection of some of the doubtful accounts. While accounts are in the doubtful or suspense stage there is no guide except experience as to the amount that will probably not be collected. Of course no accounts known to be uncollectible should be carried as assets.

The last class of these current assets is a grouping of accounts known as Prepaid Expenses. These represent the payments of expenses in advance of the periods to which they pertain, as for instance insurance premiums may be paid in the month of January covering insurance for the entire year or even for several years. It would obviously be unfair to charge all these premiums to the January

expenses, and in fact if the company should cancel its insurance before expiration it could collect part of the premiums it had paid, so that to some extent the prepaid expenses are convertible into cash. The case is not so clear for treating some other prepaid expenses as if they were convertible into cash but in general it is fair to consider them as current assets because as to directories for instance, since the company will unquestionably continue in business during the period for which it has provided directories, the amount of cash that will be needed to meet its current obligations is reduced by the amount of this prepaid directory expense.

Some objection has been made to considering receipts from advertising in directories as a deduction from directory expense, it being suggested that it should be included in the revenue. Our view is that the general purpose of directory expense should govern the accounting. Since the directory is an essential feature of the operation of a telephone plant it follows that the advertising is sought wholly for the purpose of reducing that expense. If the company published directories as a separate business venture, which it would discontinue should the venture pay no net return, the accounting treatment would be different.

VIII. Securities Owned.

The last class of property, to which reference need here be made, may be comprised under the general term Securities Owned. These are mostly stocks and bonds of allied companies which may properly be carried at their cost so long as such cost does not exceed the true value, or may be inventoried from time to time and the property account corrected to the inventory value.

IX. Capital Obligations.

Turning now from the asset or property accounts to

the liability accounts which represent the source of the funds with which the property has been purchased.

For convenience we may distinguish three general classes of liabilities—

Capital Obligations,
Current Obligations,
Reserves and Surplus.

Capital Obligations are of several different forms, their titles usually indicating their relative standing as liens against the company's property.

Bonded Debt and Real Estate Mortgages are usually first liens on the property. When such obligations fall due they must be satisfied in some way even if the property has to be sold under the hammer to raise the cash.

Bills Payable are sometimes ranked as current obligations because commonly they do not run very long; but on closer analysis, I think (at least in the telephone business) they are usually temporary financing to provide additional permanent property. On this theory I include them with capital obligations.

As to the account Bills Receivable Discounted, the question is occasionally asked why the books should show as an obligation a promissory note to the company which it has endorsed and sold to its bankers or someone else. The reason is that so long as the company may be called on to pay the note (which will happen in case the endorsement leaves any recourse to the endorser and the giver of the note fails to pay) the company has an obligation, and to clearly understand the company's financial status every liability, direct or contingent, must be shown. Of course such notes would also appear under Bills Receivable in the property accounts.

The last and usually largest capital obligation is Capital Stock representing the ownership of the business. This is always the last lien on the property or rather is no lien

at all, but in a dissolution gets whatever is left after all other obligations are satisfied.

X. Current Liabilities.

Current Liabilities in general represent the obligations falling due in the ordinary course of the business and to meet which cash must be currently provided.

Of these, Accounts Payable are usually the most important. It is common practice to compare the Accounts Payable with the cash on hand so as to know the company's immediate financial situation. A closer analysis is however advisable since for instance, some current accounts payable may not, under the terms of payment be due for one or two months, and while cash may be low at the end of the month it may be safe to rely on the collection, during the first part of the next month, of a certain proportion of Accounts Receivable. Accounts Payable are for convenience classified according to the parties to whom they are payable.

The Account Accrued Liabilities not Due may in a way be called the opposite of the asset account Prepaid Expenses. While Prepaid Expenses represent payments for expenses in advance of the periods to which they pertain, Accrued Liabilities not Due represent the expenses which are not payable until after the period to which they pertain.

The necessity for these two accounts lies in the fact that we attempt to make accurate statements each month of the business results for that month, whereas some kinds of expenses as taxes, insurance and interest may be payable annually or quarterly instead of monthly.

It is necessary also to provide a Liability account for Unearned Revenue, because in some cases bills for service are rendered in advance for a period of three months or more, whereas after the month in which the money is received the company is still under obligation to furnish service for a further period. This account therefore is also

needed in order to make the monthly statements cover only the month's business.

XI. Reserves and Surplus.

In a general way it may be said that reserves and surplus (sometimes called Surplus Reserves) represent the company's provision against impairment of its capital under all possible contingencies, some of which can be foreseen but their probable cost cannot be known, while others cannot be foreseen but are part of the risk and uncertainty which must accompany all human undertakings.

1. Replacement Reserves.

The account about which there is generally the most discussion is that bearing, in the new accounting circular, the title Replacement Reserves. Perhaps the best way to get an understanding of the meaning and use of this account is to consider here in one place all the accounts to which it is related and to confine the discussion for the moment only to Plant. Next let us disregard the terms Construction, Reconstruction and Maintenance and fix our minds on these terms,—New Plant Built, Old Plant Removed, Cost of Removal, Salvage, Repairs, Depreciation and Replacement Reserve. These terms comprise and roughly describe all the transactions that relate to the subject. The logical and correct way to account for these transactions is as follows:

(a) As new plant is built, whether it represents additions to the system or replaces old plant, the cost of building such new plant is charged to the proper plant account.

(b) As the plant is repaired so as to keep it in working order, the cost of the repairs which cannot be considered as adding to the original value of the property, must be charged to expense.

(c) It cannot be doubted that every part of the plant is, in spite of repairs, gradually and in some cases

imperceptibly deteriorating so that it will at some time in the future have to be abandoned or replaced. In addition to this general but gradual deterioration there are two probable causes for future replacement, known as obsolescence and inadequacy. Obsolescence arises from the fact that by the progress of invention old types of plant have sometimes to be discarded before they are worn out, because more efficient types must take their place. Inadequacy may be caused by advances in the art or by more rapid growth than was foreseen, or by public regulation.

The consensus of opinion of accountants and other students of the question is that this gradual deterioration, obsolescence and inadequacy, grouped together under the general name of depreciation, should be provided for out of the earnings (or in other words charged to expenses) as fast as it is estimated to accrue. This means that there must be a monthly charge to expenses representing the estimated accrued depreciation for the month.

(d) Now since this is not at once a cash outlay the charge to expenses must be offset by an equal credit to some account. For that account we adopt the general term Replacement Reserves, thereby recognizing that this provision is made to replace the plant when it has to be taken out for any of the causes called depreciation.

(e) As old plant is taken out for these causes it is clear that the plant account should be accordingly decreased because, being no longer in existence, the books should no longer show it as an asset. Old plant removed is therefore credited to the proper plant account and charged to Replace-

ment Reserve, which as just stated has been provided for that purpose.

(f) But the provision for depreciation if correctly made recognizes that there would be some salvage from the old plant when taken out and that the cost of removing the old plant so as to recover the salvage would reduce the net value of that salvage. This net value of salvage must then be credited to Replacement Reserve.

(g) As old plant is removed it may or may not be replaced by new plant or if replaced, the new plant may be of different character. This however does not affect any of the foregoing since the cost of any new plant, for whatever reason built, becomes at once an addition to the plant accounts.

Although these processes are for convenience somewhat expanded, in practice, it is simpler to perform than to describe them. It is important that they be generally comprehended because they comprise the only known method by which the transactions that really occur can be recorded on the books.

The question is raised as to the growth of this account, Replacement Reserves. We show, for instance, that the Associated Bell Operating Companies in the United States during the first ten months of the year 1909 charged to expenses for depreciation nearly $11,000,000 more than was required to take care of old plant taken out of service during that period. The reason and necessity for this is as follows. The bulk of the present plant of the Bell Companies has been built within the past five years and has not yet deteriorated to the point of replacement. The old plant now coming out of service is that built ten, fifteen or twenty years ago. Since the whole plant was then very much smaller than it is now, replacements actually taking place now are less than they will be ten, fifteen or

twenty years from now. But depreciation is accruing on the present enormous plant day by day, month by month and year by year. It is this depreciation we are providing for out of present earnings, not that which began accruing ten, fifteen or twenty years ago.

2. Reserve for Sinking Fund.

By the terms of some bonds a so-called sinking fund must be provided.

Reserve for Sinking Fund means that part of the net earnings, instead of being paid out in dividends or added to surplus, are set aside to be used to pay off bonded debt. This money so set aside is commonly turned over to a trustee who invests it till the bonds are due; such investments and the income from them being carried in a special property account called Sinking Fund. When the bonds are thus paid off the reserve for sinking fund has served its purpose and may go back to surplus, having been in the meantime an appropriation from surplus to safeguard the security of bondholders. But it is not always provided in the mortgage securing the bonds that the additions to sinking fund must be met out of earnings before dividends are paid, nor is this necessary for the bondholders' protection when proper provision for depreciation is taken out of earnings and put in replacement reserves. In such cases it is a common practice not to set up a reserve for sinking fund at all but to transfer the stipulated amounts from the asset account Cash, which is under the company's control to the asset account Sinking Fund, which is under the control of a trustee for the bondholders.

3. Surplus.

The general purpose of surplus is similar to that of replacement reserves and reserves for sinking funds, viz., to keep the capital from becoming impaired. Replacement reserves and reserves for sinking funds

however relate to specific property or specific debts, while surplus may be used for any contingencies that may arise. In fact a part of surplus is sometimes called "Contingent Reserve" or some similar name.

It frequently happens that the stockholders prefer to take smaller dividends and leave the balance of the earnings as additional capital in the business, or the business may have such hazards as to property values or such fluctuations in earnings that the safeguarding of regular and steady dividends at an average rate can best be attained through the surplus account.

The source of surplus too is somewhat different from that of replacement reserves. The additions to the latter are properly a part of expenses and as such come out of revenue before dividends can be paid from current revenue, while surplus commonly represents the accumulations of net revenue after dividends have been paid.

Without entering into fine distinctions however it helps to understand the general status of a company with respect to its property on the one hand and its obligations on the other if the surplus and these reserves are grouped together.

XII. Revenue.

The various terms Revenue, Earnings, Income and Receipts are often used more or less loosely to represent about the same thing. We use the term Revenue as being perhaps the least ambiguous. In the best modern accounting practice the revenue is deemed to be earned in the period during which the service is rendered, whether the money is all received in that period or not.

There are two principal sources of telephone revenue—that from exchange service and that from toll service. While the general distinction between the two is plain, it becomes necessary in practice to make as exact defini-

tions as possible and in some doubtful cases, to make arbitrary rulings.

Exchange Service is defined for accounting purposes as the transmission of messages by telephone between two stations both of which are within, or receiving local service from, the same exchange service area. An exchange service area is that area referred to and usually described in the company's contracts with its subscribers within which local service is furnished subscribers at rates specified in such contracts.

Having defined exchange service, it, of course, follows that toll service covers the transmission of messages by telephone between two stations in different exchange service areas.

Under exchange service the bulk of the revenue is, of course, that from subscribers. Much consideration was given to various suggestions for sub-dividing revenue from subscribers' stations among various classes of stations but it appeared that the sub-divisions possible of general application, would be of little practical value in many places. It was finally decided to provide the optional sub-accounts shown in the circular, with the thought that they would be used chiefly for the larger cities and perhaps still further amplified in the largest cities.

The revenue from pay stations is generally of a distinctive character so as to be easily segregated.

Other accounts, provided under exchange revenue, are believed to be needed not only so that such revenue can be known and thereby greater effort made to increase it, but also that subscribers' revenue may not be loaded up with items which have no particular relation to the contracts with subscribers.

Under toll revenue we distinguish two main classes. First, the revenue from toll messages entirely over the company's lines, known as company tolls, and next, the revenue known as foreign tolls which represents the com-

pany's proportion of the revenue from toll messages, one or both terminal points of which are not on the company's lines. Optional sub-accounts, under both these heads, have been provided to distinguish intrastate from interstate tolls.

It may be well here to indicate what is generally meant by the company's proportion of foreign tolls. A toll message frequently passes over the lines of two or more companies, the whole revenue however being collected by one company. The division of revenue is made on a basis described in contracts between the connecting companies, being either prorated according to mileage or a commission allowed. The collecting company then receives not only its own revenue from the message but also acts as an agent in collecting and paying over to the other company or companies their revenue from the message. The revenue collected on behalf of others is not revenue of the collecting company and if for bookkeeping convenience it is originally included under revenue it must be deducted therefrom each month.

Other sub-accounts of revenue are provided along the lines that experience seems to indicate will be found useful.

XIII. Expenses.

In the classification of expenses more changes have been made and more sub-accounts have been introduced than in any other part of the accounting system. The reason for this is a natural one, relating to the growth of the telephone industry.

The alert manager of a small business sees with his own eyes the improvements that should be made in order to keep his expenses down and his service up and these things he can correct on the spot by verbal directions or perhaps with his own hands.

As a business grows the administrative head has to depend partly on similar action by his subordinates, veri-

fied by their reports to him, and partly by the financial results as disclosed in the bookkeeper's reports. From this point on, the supervision of the business depends largely on the development of organization and accounts.

From very humble beginnings the Bell system has passed through successive periods of experimentation, education of the public to the use of the telephone and enlistment of capital, to the construction of great plants and the building up of great organizations to care for a great public utility.

The development of the industry has now reached the period when efficient conduct of daily routine is to be a great and perhaps the dominant feature. Complete and detailed information as to expenses are an essential part of such a program. We make no apology for insisting on this as a vital part of the accounting of the Bell system.

The clerical processes by which such detailed information can be obtained are outlined in the standard routines just published, which are believed to be the most efficient that can be devised to meet present conditions. We confidently expect that the development of mechanical accounting processes can reduce the clerical work involved for detailed expense accounts considerably below what it has been for the simple accounts used in the past.

The sound principle for uniform expense accounting in large companies is that classifications should conform to the predominant type of organization. The type of organization now predominant and being more and more generally adopted as its advantages are more clearly understood, is commonly known as "functional," that is departmentalized throughout the field according to classes of work, with each class of work wherever performed under the jurisdiction of one department. The departments generally recognized are:

Executive,
Accounting,

Financial,
Legal,
Commercial,
Traffic,
Plant.

Of these, there are three departments directly responsible for the greatest expenditure of money, viz.:—the Commercial, Traffic and Plant Departments.

In the Commercial and Traffic Departments the accounts believed to have the greatest administrative value have been provided. These in some cases represent subdepartments, but this principle has not been blindly followed, because it has seemed in the analysis of expenses better to emphasize by segregation certain expenses which from their nature are relatively large; as for instance, Operators' Wages.

The Plant Department necessarily requires in the accounts special treatment because this department in general manages the building of new plant (which goes to the property accounts), removal of old plant (which is a charge to Replacement Reserves) and repairs to plant (which are charged to expenses).

While the detail work of all these transactions can be directly charged to the appropriate account, general supervision of such work cannot be conveniently or accurately distributed at the time the expenditure is made. This condition is provided for by classifying all plant supervision expenses under a special account, which at the end of every month is "cleared," that is, divided among other accounts. Another advantage in treating plant supervision expense in this way is that all such expenses are first put together in one place, so that a report for administrative uses can be conveniently made up.

This in general is the principle followed in all clearing accounts. Thus all real estate expenses can by this means be kept together for the month and apportioned as rent

to the various departments, depending on the area and character of floor space they use. Likewise tool expense and stable and garage expense have to be apportioned to different classes of accounts, depending on the use made of the property included under the account Tools and Vehicles. Supply expenses also have to be distributed to different accounts, depending on the accounts to which the material delivered from supplies has been charged.

Reference has already been made to repairs as related to plant and replacement reserves. I shall not here comment on its meaning or discuss the interpretations that have been developed concerning it. The sub-accounts of repairs are a condensation of the corresponding accounts of plant. The main purpose in this is to get unit costs of repairs.

Occasionally a severe sleet storm throws a heavy burden on repairs and it may be noted in passing that a method of making provision in advance for this occasional heavy burden, or of equalizing it among months, has been provided.

The expense account which shows the cost of the constant shifting in telephone stations, previously referred to, is known as Station Removals and Changes, and the information possible through this account will be found to be of great importance.

These three accounts, Repairs, Station Removals and Changes, and Depreciation of Plant, comprise what is commonly known as Maintenance, all of which is usually a responsibility of the plant department.

We come next to some other expenses which are not precisely departmental expenses. These include rights, privileges and use of property, the new definition of which expresses clearly, we believe, the purpose of such expense and the meaning of this account. Insurance and taxes complete the classes of expenses.

Now having ascertained all the expenses,—among which

sufficient depreciation should have been included,—they may be subtracted from revenue and the difference will represent the net earnings of the business for the period. From the net earnings must first be deducted the interest pertaining to the period on all the company's indebtedness. The balance represents the earnings on capital stock, most of which in common practice goes to the shareholders in the form of dividends, the balance, if any, being added to Surplus.

XIV. Non-Functional Exchange Expenses.

As already explained the accounts, particularly the expense accounts, are primarily designed for and adapted to a company having the functional form of organization. But even a company so organized may have small or isolated exchanges where it is advantageous to have all the classes of local work under the general supervision of one local man, and indeed there are large companies made up chiefly of small exchanges of this character and with this organization. It is to take care of such cases that the account known as Non-Functional Exchange Expenses has been devised. By this means the expenditures made under the direction of Exchange Managers may come through the books and be concentrated in one account without first making a theoretical sub-division according to departments. Having been aggregated in one account however they must, for the sake of general uniformity and the combination of all accounts, be apportioned as if departmental lines existed, a method for such apportionment being provided.

XV. Geographical Areas.

Many companies, particularly the larger ones, cover so broad a territory that it is important to know the property, revenue and expenses sub-divided into geographical areas. This is a difficult branch of the accounting not only because it involves great detail but more particularly because carried to its extreme it involves apportionment of

so large a proportion of revenue and expenses as to seriously invalidate the results. It is obvious, for instance, that to the man in charge of work in a given geographical area the proportion of general expenses charged him on some arbitrary basis has no vital meaning. He knows that the accuracy of the amount of general expenses charged cannot be substantiated as actually incurred for the benefit of his district, and that even if it were correct, it would be beyond his power to reduce it by his own efforts. At the same time it is important that the expenses which are incurred under his supervision should be segregated and known both to his administrative superior and, in my judgment, to himself.

The reasonable course appears to be to segregate by the geographical areas used for administrative purposes, the revenue and expenses which directly pertain to each such area and to apply the administrative pressure to get better results by means of a comparison of such direct results in different areas, or for different periods in the same area.

XVI. Reports.

There are in every business two fundamental financial reports, the balance sheet as of a given date and the earnings report for a stated period. The balance sheet comprises on the one hand the assets or property, and on the other hand the liabilities. Including surplus, the liabilities must always exactly equal the assets. The earnings report shows in greater or less detail, the revenue, expenses, net earnings, interest, dividends, and the balance, if any, added to surplus.

All other reports from the books, of which there may be an infinite variety, are subordinate to these two principal reports and serve to amplify or explain details and make comparisons.

While the general situation of a business cannot be understood without the balance sheet and earnings re-

port, the success and value of an accounting system must depend largely on the form of the subordinate reports and the use made of the information they furnish.

Conclusion.

Only time and experience will really show to what degree this accounting plan is permanent. Our belief is that it affords a foundation on which can be built all the improvements and changes that may from time to time be wanted to assist and guide the development of the business.

Many good people in this country observe with anxiety the increasing concentration of business enterprises into fewer and fewer organizations, fearing the elimination of competition. They forget that this same economic process by stimulating competition between individuals in the same business is developing the high degree of individual efficiency that has made possible the steady advance in wages of all classes of labor.

A most important accounting work for the future lies, I think, in the endeavor to show through accounting systems the relative efficiency of individuals. Perhaps it is not an idle dream to imagine that the time may come when it will be as much a function of an accounting system to show to each individual employe the results of his labor as it now is to show to each stockholder the result of his investment of money.

This tendency, whatever practical limits it may prove to have, means now not only that administrative officers must understand what the accounts say for their larger fields of responsibility but that department heads and individual employes must begin to learn what the accounts teach about their work.

There need be nothing mysterious or obscure about accounts and accounting reports. They can and should be so stated that anyone, having such an understanding of arithmetic and language as a common school education affords, can readily fit himself to understand them.

UESTIONS IN

BUSINESS ADMINISTRATION

ACCOUNTING

Fundamental Ideas.

1. What erroneous uses are made of the word "accounting"? Page 3.
2. In what way is accounting related to the science of economics? Page 4.
3. What is the relation between the accountant and the bookkeeper? Page 4.
4. What has caused the evolution of the accounting profession? Page 5.
5. What subjects does the regular examination for public accountants now include? Page 8.

Construction of the Account.

1. What is lacking in a classification of "bought" and "sold"? Page 11.
2. What do the terms "debtor" and "creditor" mean as used in an account? Page 11.
3. What is an account? Page 13.
4. What should an accounting system show? Page 14.
5. What is a nominal account? Illustrate. Page 15.
6. Illustrate a real or property account. Page 16.
7. Give two reasons for keeping personal accounts. Page 16.
8. On June 1, James Brown bought 144 boxes of strawberries for $8.00. On June 1, he sold 60 boxes at 10 cents per box. On June 2, he sold 80 boxes at 10 cents per box, and 4 boxes spoiled. He had to pay 50 cents for the use of a cart. Show how his cash account would

appear at the end of June 2. Pages 17-23.

9. What is meant by the double entry system of bookkeeping? Page 24.

Keeping the Books.

1. Why would the day book alone be an insufficient record of the transactions of a business? Page 26.
2. What is the nature of the ledger? Page 26.
3. What is the purpose of the journal? Page 27.
4. Illustrate the journalizing of a transaction. What does it indicate? Page 28.
5. What is the best classification of the day book? Page 30.
6. What is the general ledger? Page 32.
7. What is the cash book? Page 33.
8. When is an account said to be balanced? Page 35.
9. How is a trial balance prepared? Page 36.
10. How is the net worth of a business determined? Page 40.
11. Of what does the balance sheet consist? Page 41.

Capital.

1. How should the capital account be kept in the case of a partnership? Page 45.
2. What is an installment book? Page 47.
3. If John Smith has 30 shares in a concern and wishes to transfer 20 shares to R. Jones, how is the exchange of shares recorded? Page 49.
4. What is treasury stock? Page 50.
5. How does the privilege of allowing some stockholders to furnish property in payment for stock afford a shrewd money-making scheme? Page 51.
6. What gives rise to a good-will account? A surplus account? Pages 52, 53.
7. What is the erroneous idea as to the reason for a concern's issuing bonds? Page 54.

Cash Account.

1. Smith and Brown each contribute to the capital $4,000 in the form of checks. The cashier deposits them in the First National Bank. Give two methods of keeping a record of the transactions. Pages 57, 58.
2. Jones buys of Smith & Brown $500 worth of goods and gives his note in exchange. Show how this will appear on the books of Smith & Brown. Page 60.
3. The bank takes Smith & Brown's note of $500, crediting their account with the amount, but exacting $2.50 discount. How should this discount be accounted for on the books of Smith & Brown? Page 63.
4. If Jones dishonors his note, what course will the bank take? How will this change the accounting? Page 64.
5. If the note had not been discounted but had been dishonored by Jones when directly presented by the firm, what entries would have been made? Page 65.
6. If Smith & Brown secure a renewal of a bill they owe, how is the accounting affected? Page 67.
7. What is the relationship between cash, bank, bills receivable, and bills payable? Page 67.
8. Give an example of a contingent liability. Page 68.

Goods Accounts.

1. What is an "inward returns" book? An "outward returns" book? Page 71.
2. Jones & Jones, having goods to the amount of $10,000, sold to J. Jackson $1,500 worth of goods. On unpacking, Jackson found that $250 worth of the goods were damaged, and he returned them. How would these transactions appear on the books of Jones & Jones? Page 72.
3. Smith & Brown receive from Thomas Taylor a consignment of goods worth $100. They sell the goods

for $150. After deducting their commission of 10 per cent, and freight charges amounting to $2, a draft for the remainder is remitted to Taylor. How would the accounts appear on the books of Smith & Brown? Page 77.

4. Illustrate the trading account. Pages 78-82.
5. What does an inventory show? Page 83.

Plant and Property Accounts.

1. Of what do plant and property accounts consist? Illustrate. Pages 85-87.
2. What uses may be made of the money held in the business to represent the value of destroyed or wasted assets which have depreciated in value? Page 89.
3. What are the objections to the process of writing down assets to correspond with their true value? Page 90.
4. At the end of a year's business a firm finds that there is a deterioration amounting to $250 in its plant and property. To offset such depreciation, U. S. bonds are bought. How will this transaction be shown on the books? Pages 91, 92.
5. What is a depreciation reserve? Page 92.
6. Illustrate a transfer of fixed assets into floating. Page 94.
7. What is the most practical method of accounting for depreciation? Page 95.
8. Name the causes of deterioration. Page 96.
9. What factors must be considered in estimating depreciation? Page 98.
10. What is the effect of a too cautious depreciation policy? Page 101.
11. How does a bank safeguard capital against possible loss? Page 101.
12. How is appreciation accounted for in the books? Page 102.

Manufacturing Accounts.

1. How does the manufacturing accounting differ from the accounting of an ordinary retail business? Pages 106, 122.
2. How is the expense side of manufacturing shown in the books? Page 107.
3. What items would appear on the debit side of the production account of the manufacturing department of a concern? On the credit side? What would the account show? Pages 110, 111.
4. What does the trade value represent? Pages 112, 124.
5. How is the cash which is received by the selling end of a concern treated in the books? Page 114.
6. How does the profit shown by a manufacturing or packing department differ from the profit shown by the selling department? Page 114.
7. When departmental ledgers are kept, what accounts are found in the general ledger? Page 116.
8. What is the purchases analysis book? Page 119.
9. Give a method by which the amount of materials issued may be kept track of. Page 120.
10. What items must an accounting system keep separate? Page 121.

Cost Accounting.

1. Define cost accounting. Page 123.
2. Why is it impossible to know the exact cost of units of goods by the departmental system of accounting? Page 123.
3. What is the object of cost accounting? Page 124.
4. Describe a cost sheet. Page 125.
5. Of what use is the cost sheet? Page 126.
6. Explain the use of the individual cost sheet. Page 127.
7. How can the cost accounting be carried on as a part of the general accounting system? Page 128.
8. What is the nature of the contract ledger? Page 131.

9. What is the use of the bought ledger? Page 133.
10. What is the work of the cost ledger? Page 135
11. Name the four bases of cost accounting. What method of accounting is adopted for each basis? Page 140.
12. Of what does the problem in cost accounting as applied to modern business consist? Page 140.
13. What is the best cost system for a concern of large-scale production? Page 142.

Profit and Loss Accounts.

1. What difficulties arise in the profit and loss accounting as the operations of a business increase in complexity? Page 145.
2. What is shown by each of the four sections into which profit and loss account may be divided? Pages 147, 148.
3. What important facts are shown by the sub-divided profit and loss account? Page 150.
4. What general principle is followed in sub-dividing profit and loss account? Page 151.
5. Into what classes may all incomes and expenditures be divided? Page 152.
6. How should increased assets be treated in the books of a firm? Page 153.
7. How can the profit and loss account be made to show the results of a business for a fiscal period? Page 156.
8. How must a profit and loss account which shows simply the increase in cash be supplemented? Page 159.
9. Give an instance where dividends should not be declared even when a profit has been earned. Page 160.

The Balance Sheet.

1. What simple rules aid in determining whether an item is an asset or a liability? Page 163.
2. Give an example of an accrued expense. Page 163.

3. What is a balance sheet? Page 166.
4. When will depreciation appear in the balance sheet as an asset? As both an asset and a liability? Page 168.
5. Describe the standard form of balance sheet. Page 169.
6. How does the English form of balance sheet differ from the American form? Page 170.
7. What must a person have in order to interpret a balance sheet? Page 173.
8. What knowledge of a business does a balance sheet show? Page 174.
9. What is the object of the double account system of balance sheet? Page 176.
10. How is depreciation treated in the double account system? Page 177.
11. Why is the double account system of no use in the case of a bank? Page 179.
12. What is the nature of a statement of affairs? Page 182.
13. What is a deficiency account? Page 183.

Auditing and Reporting.

1. What is auditing? Page 185.
2 What is the legal aspect of auditing? Page 185.
3. Illustrate the commercial side of auditing. Page 186.
4. How does the auditor check up the accounts of a business? Page 187.
5. What rules may be adopted by a concern in order to guard against fraud in its accounting? Page 189.
6. What are the responsibilities of an auditor? Pages 191, 192.
7. How does an auditor proceed to examine the payments and receipts of cash and the cash items of a bank? Page 194.

8. What is meant by the analysis of an account? Page 196.

Accountancy Examinations.

1. What methods characterize the present tendency toward regulation of the accountancy profession? Page 211.
2. In what way are the professional standard and methods maintained? Page 212.
3. Give the scope of examinations required to authorize issuance of the C. P. A. certificate. Page 214.
4. Name the suggestions made with reference to examinations. Page 215.
5. Wherein do examinations for auditing differ from examinations for accountancy? Page 216.
6. How extensive a knowledge of law should a student have? Page 219.
7. What knowledge of mathematics is desired in an accountant's equipment? Page 221.
8. In what way is a general preliminary education desirable? Page 224.

Accounting Terminology.

1. In what respects do accounts kept by the executive officers of the Government differ from those kept by the general fiscal officers? Page 245.
2. What two types of accounts are used in private business? Pages 245, 246.
3. Distinguish between "proprietorship accounts," and "fiduciary accounts." Page 246.
4. What books are usually kept by municipalities? Page 247.
5. What are the principal innovations introduced by modern accounting? Page 248.

6. How may properly kept accounts be an aid to honest municipal government? Page 249.
7. Give and describe the two general types of accounts that have recently been introduced by many city governments. Page 250.
8. How do some cities make use of accounting in their attempt to measure the efficiency and economy of their administration? Page 251.
9. Discuss difficulties arising when payment of warrant is deferred for long periods, referring to both past and present issues. Pages 251, 252.
10. What are the two important results to be accomplished in city governments by a correct accounting system? Pages 253, 254.
11. Give the reason for non-uniformity even among skilled accountants. Pages 254, 255.
12. What is accounting as defined by Mr. Powers? Page 255.
13. Distinguish between nominal and actual assets. Page 257.
14. Define funds; investments. Page 258.
15. What is the difference between bills receivable and accounts receivable? Page 260.
16. What is the weakness of most city "asset accounts"? Pages 261, 262.
17. How has the influence of the Bureau of the Census tended to promote accuracy and regularity in city "asset accounts"? Page 262.
18. Define liabilities; debts; fixed debts; floating debts. Pages 264, 265.
19. What are the two general classes of trusts? Page 266.
20. Classify liabilities under three heads. Page 267.
21. What is the objection to classifying proprietary interests with general liabilities? Page 268.
22. How does the Bureau of the Census distinguish be-

tween the claims of creditors and proprietary interests? Pages 268, 269.

23. How are proprietary interests variously designated? Page 269.
24. Distinguish between permanent and temporary reserves. Page 270.
25. What is the difference between unreserved and reserved interests of beneficiaries? Page 272.
26. What is meant by nominal revenue accumulations? Pages 273, 274.
27. Define the two classes of governmental reserves. Pages 274, 275.
28. Itemize the various expenses of a government coming under the heads, general and commercial expenses. Pages 276, 277.
29. In governmental accounting, what is included in the term "interest"? Page 278.
30. From what sources do governments derive their income? Page 280.
31. Define the following forms of taxes: Property tax, business taxes, license tax, poll tax. Page 282.
32. How does the Bureau of the Census classify the two forms of privileges? Pages 283, 284.
33. Define fees; charges. Page 284.
34. What are the real or actual receipts of a governing body? Page 286.
35. For what four purposes are government revenues intended? Page 287.
36. From what two sources do municipalities, states, etc., draw their revenue? Pages 287, 288.
37. What are "counterbalancing payments and receipts," and into what four classes are they divided? Page 289.
38. What are nominal payments and receipts? Page 290.
39. Define investment transfer payments and receipts; major transfer payments and receipts. Page 291.

40. How did the expressions "ordinary" and "extraordinary" payments and receipts originate? Pages 291, 292.
41. How are extraordinary expenses generally met by the average state? Page 293.
42. What facts should a proprietorship account disclose? Page 295.
43. What are "controlling accounts"? Page 297.
44. What special conditions should government summaries show? Pages 298, 299.
45. Classify the important facts that should be brought out in the general summary of expenditures. Pages 299, 300.
46. How should summaries of government receipts be arranged? Pages 302, 303.
47. In order to be of the greatest administrative assistance, how should payments and receipts be finally classified? Pages 304-306.
48. What question arises in keeping the accounts of a city whose general property taxes are never collected in the year when levied? Page 309.
49. According to many accountants what limitations are to be placed upon proprietary accounts? Page 311.
50. In addition to showing facts with reference to resources provided or expended in carrying out the administrative policy, what additional facts should government accounts show? Page 312.
51. What confusion arises on account of accountants' indiscriminate use of the terms "balance sheet" and "profit and loss"? Pages 313, 314.

Changes in Government Accounting.

1. How far are the methods of transacting business by the Government adapted to their purpose? Page 315.
2. What was the problem in the reorganization of the Treasury Department? Page 318.

3. Name the general classes under the head of general accounts. Page 320.
4. Describe the recommendations for accounts of disbursing officers. Page 321.
5. What class of operations of the Government was first put under cost accounting? Page 323.
6. Describe the situation met in the Government Printing Office. Page 326.
7. What were the main ideas covered by Mr. Leech under his plan of cost accounting? Page 327.
8. Explain the system in its operation. Page 328.
9. Describe the method in ordering work done by the Government Printing Office. Page 333.
10. Describe the system of cost accounting used in the mints. Page 341.
11. What is the general plan of cost accounting used in the Census Bureau? Page 343.
12. Give the general effect of the changes wrought by cost accounting in government work. Page 347.

Corporation Tax Regulation.

1. What is the general subject of section 38 of the Act of Congress, August 5, 1909? Page 348.
2. To what class of companies does the act apply? Page 353.
3. Analyze the definitions and rules for determining income of the various classes of corporations. Page 353.

Federal Corporation Tax.

1. What special difficulty is met with in legislation by accountants? Page 367.
2. What do the official regulations for making up the tax returns show? Page 371.
3. Show the difficulty in providing for depreciation under the act. Page 377.

4. What will probably be the rule as to deductions on account of cumulative dividends? Page 380.
5. Name a few of the problems which will require adjustment in the assessment of tax on net incomes of corporations. Page 382.

Primer on Cost Keeping.

1. Give the general suggestions of the author for the analysis of costs. Pages 387, 388.
2. What is the governing principle of cost accounting? Page 391.
3. Name the two classes of government factories and classify their operations. Pages 394, 395.
4. What are the two general classes under which practically all the expenditures of a given enterprise fall? Page 399.
5. What distinction is to be made between cost and purchase price? Page 401.
6. Name the expenses generally included in the factory burden. Page 404.
7. Give the author's suggestions for the apportionment of indirect charges. Page 405.
8. Describe briefly the two systems for combining the records of the elemental costs. Page 409.
9. What two costs are to be considered in government contract work? How are these costs computed? Pages 411, 412.

Principles of Cost Accounting.

1. Give the main cause why cost systems have been failures. Page 415.
2. Name the first feature in an understanding of manufacturing cost; the second; the third. Pages 415-418.
3. At what point does accounting for cost cease and selling cost begin? Page 421.

4. Analyze the various elements that enter into manufacturing cost. Page 423.
5. Differentiate between the various systems of calculating factory expenses. Page 425.
6. Name the factors that are included in machine costs. Page 428.

Legal Decisions.

1. On what basis should the capital stock of a corporation be assessed for taxation? Page 432.
2. How should real estate be assessed for taxation? Page 433.
3. Give the basis for valuation of personal property and franchises. Page 435.
4. In ascertaining the valuation for taxation of property for water supplying purposes, what elements should be considered? Page 445.
5. In fixing the dividend returns on stock of a public service corporation what should be the basis of valuation? Page 459.

The Balance Sheet of a Railway.

1. Outline the form of general balance-sheet statement required by the Interstate Commerce Commission in the annual report of carriers to this Commission. Pages 465-469.
2. Name the different forms of secured debt that are generally carried on the books of a railway company. Page 468.
3. What items should appear on the accounts of property owned as investment? Pages 469-473.
4. Outline briefly the deferred debit items, and tell in detail how discount on stock and discount on funded debt are treated. Pages 476-482.
5. How should the amounts entering into the capital stock account be subdivided. Page 482.

6. Name and describe the six items generally comprising the funded debt. Pages 484, 485.
7. What are the various forms of matured interest obligations that may appear on books of a railway company? Page 488.
8. Give a list of items that are generally found on the accounts of items in suspense. Page 491.

The Accounts of a Telephone Company.

1. Name the objects in a scheme of accounting. Page 494.
2. Analyze the limitations on these objects. Page 494.
3. Give the general plan in constructing the scheme of accounting. Page 497.
4. What four main groups must be dealt with in any scheme of accounts? Page 498.
5. Name the principal property of an operating telephone company. Page 499.
6. Give the four general classes into which the plant is divided for accounting purposes. Page 501.
7. Into what classes would equipment accounts be divided? Page 501.
8. How may outside plant be divided? Page 503.
9. Give the reasons for distinguishing between exchange and toll lines. Page 503.
10. Summarize the reasons for classifying the plant accounts. Page 504.
11. What is meant by plant unit costs? Page 505.
12. What classes of property come under the head of working assets? Page 506.
13. What classes are comprised under current assets? Page 508.
14. Name the three general classes of liabilities. Page 510.
15. Describe the several forms of capital obligations. Page 510.

16. What obligations would be included in current liabilities? Page 511.
17. Analyze reserves and surplus accounts. Page 512.
18. Give the methods of accounting for revenue. Page 516.
19. Describe the type of department organization for accounting purposes. Page 519.

INDEX

ACCOUNTING.